The LOST RIVERS *of* LONDON

NICHOLAS BARTON

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The LOST RIVERS *of* LONDON

NICHOLAS BARTON

The thought of a 'lost' river running beneath a road or house produces interest or consternation. Once a feature on the landscape, the underground streams are now symbols of a rural age in London.

When *The Lost Rivers of London* first appeared in 1962 it was immediately welcomed by scholars and general readers alike. It was the first, and remains the only, comprehensive study of those water-courses which sometimes make themselves evident in heavy rains or at the thrust of an unwary builder's earth-remover.

Many of the rivers have become part of London's complex sewer system; parts of others still run sweetly enough in the open to have recreational use. In the past they have formed boundaries, dictated the course of roads and influenced the location of industry. In these ways and others they have contributed to the history of London.

There is now renewed interest in the lost rivers and schemes are afoot to enhance them, even to bring them again to the surface. It is timely, then, for a revised edition of Nicholas Barton's classic book, brought up to date with new material and additional information.

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Nicholas Barton was born in 1935 and educated at Westminster School where he was surrounded by history and became fascinated by it. In the school boathouse he discovered a book which mentioned the lost rivers of London. He pursued this interest at school and, later, as a medical student at Cambridge and the Middlesex Hospital.

Still obsessed by the subject he won the John Nichols Prize in Local History with an essay on the theme. This he expanded to this present book, first published in 1962.

Nicholas Barton works as Consultant Orthopaedic Surgeon, specialising in Hand Surgery, at Nottingham University Hospital and Harlow Wood Orthopaedic Hospital, and is a Clinical Teacher at Nottingham University. Although his most recent writing has all been on surgical subjects, he has contributed two articles on Charles Elliott, cabinet-maker to the Prince Regent, to *Country Life*.

He and his wife Margaret have five children. His pastimes are reading, writing, hill-walking in Derbyshire, and watching cricket at Trent Bridge.

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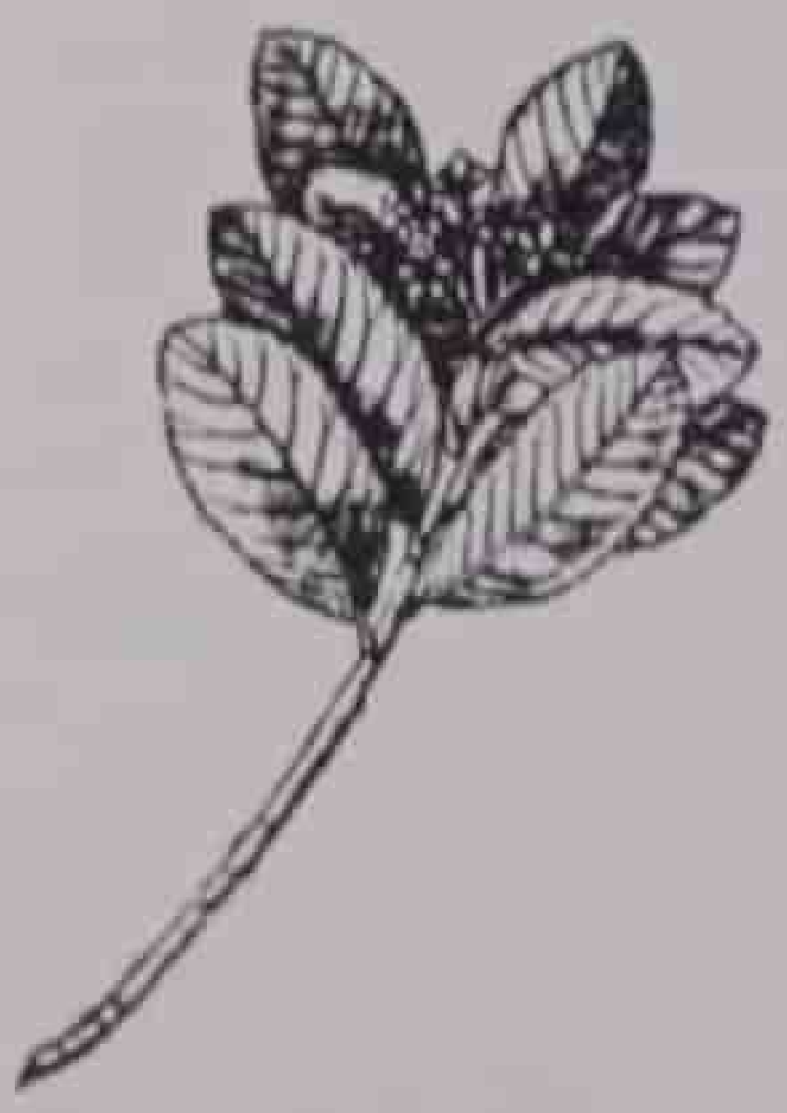

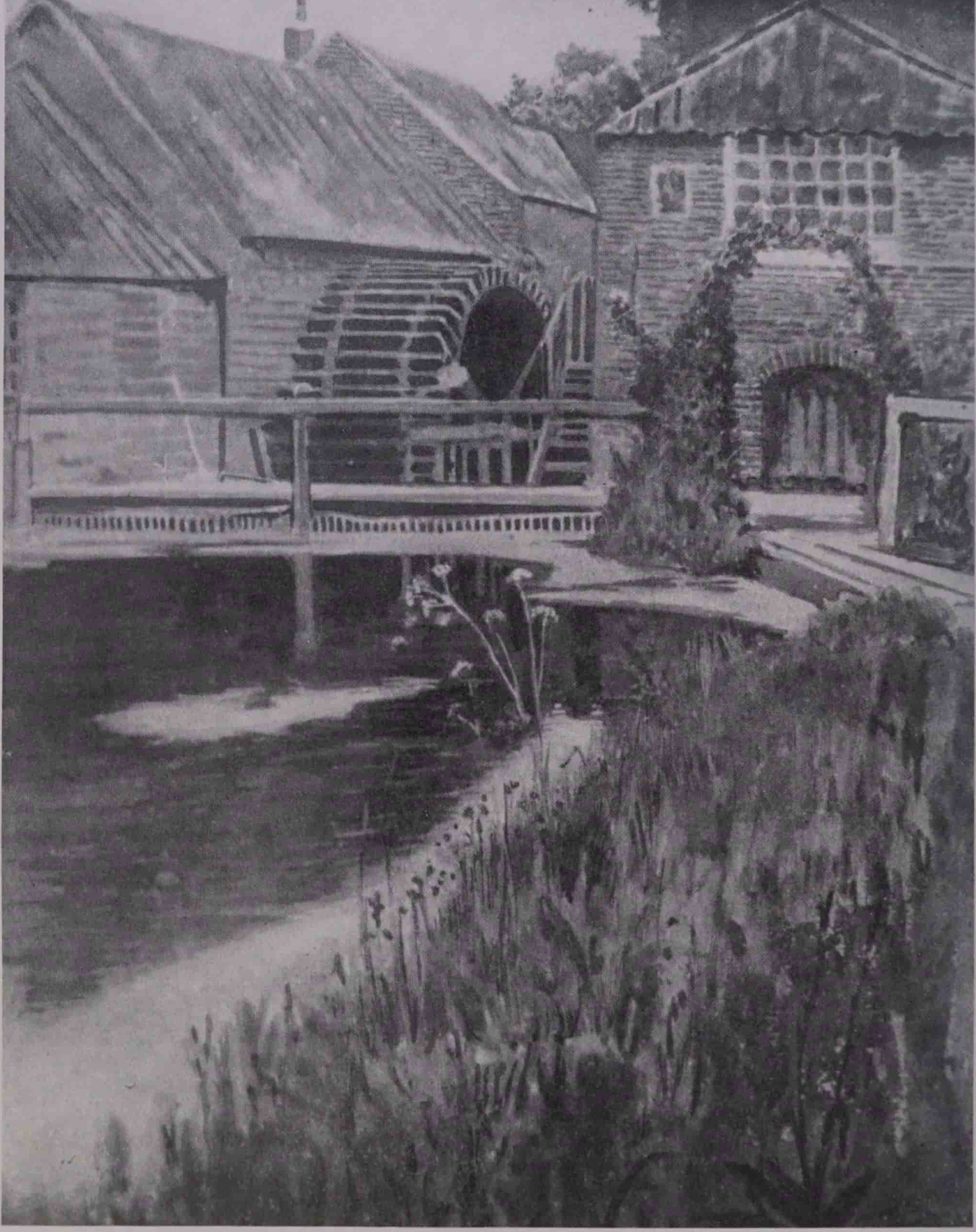

Snuff-mill on the River Wandle at Carshalton.

The LOST RIVERS of LONDON

A study of their effects upon London
and Londoners, and the effects of
London and Londoners upon them

NICHOLAS BARTON

HISTORICAL PUBLICATIONS

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This book is based upon
an essay which was awarded
the John Nichols Prize by the
University of Leicester in 1960.

TO MARGARET

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INTRODUCTION

IN THE YEAR 1180 the tide had turned. All the patient work of Henry II in formulating the English state and freeing it from ecclesiastical control had been shattered when the king's rash words were taken literally by the four knights who killed Archbishop Becket in his cathedral. For several years the king had done penance and submitted himself to ritual scourgings, but the 'turbulent priest' was now a saint, and the king himself had to make pilgrimages to his shrine. In this year William Fitzstephen, who had been personal secretary[1] to Becket and who was present at his murder, began to compose his *Vita Sancti Thomae*. Since Becket had been born in London, and Fitzstephen was himself a Londoner and inordinately proud of it, he had the happy thought of prefacing his biography with a description of London, 'one of the most renowned...amongst the noble and celebrated cities of the world'.

This description is the earliest account, of enough length to be useful, of the City of London: and though Fitzstephen was admittedly a biased observer, it forms a remarkable contrast with the London we know today. Its buildings are uniformly magnificent, its citizens pious and honest, its women chaste, and even its weather is salubrious. Perhaps the most striking differences, however, are in the topography: 'On the north side are fields for pasture, and a delightful plain of meadow land, interspersed with flowing streams, on which stand mills, whose clack is very pleasing to the ear. Close by lies an immense forest, in which are densely wooded thickets, the coverts of game, stags, fallow-deer, boars, and wild bulls. The tillage lands of the city are not barren gravelly soils, but like the fertile plains of Asia, which produce abundant crops, and fill the barns of their cultivators with "Ceres plenteous sheaf". There are also round London, on the northern side, in the suburbs, excellent springs; the water of which is sweet, clear and salubrious, "mid glistening pebbles gliding playfully", amongst which Holywell, Clerkenwell and St Clement's Well are of the most note, and most frequently visited, as well by the scholars from the schools, as by the youth of the city when they go out to take the air in the summer evenings. The city is delightful indeed, when it has a good governor.'[2]

It is still possible to find London delightful, but nowhere can one find clacking mills, let alone boars and wild bulls. What, however, of the flowing streams? The purpose of this study is to show that these rivers, still silently flowing along beneath our feet though for the most part degraded into sewers, have played a considerable part in the development and history of London, and furthermore that their influence is still felt today, not only by those who live in the damp houses above them or who get their feet wet when one of these long-forgotten streams bursts its way out into the daylight again, but by all who use London's roads and railways, pay taxes to one borough rather than another, or simply walk or bicycle along the streets.

For such a small theme, these lost rivers have been the subject of a considerable amount of literature, and an even greater amount of interest. Nothing has surprised me more in studying them than the number of other people doing the same thing. Yet in spite of this, there is only one book which purports to describe all the lost rivers[3], and even in this they are a secondary interest. The existing literature is concerned first with detailed arguments as to the courses of these rivers, and secondly with the interesting historical anecdotes associated with them and the regions through which they pass. The present study, on the other hand, will discuss the part the rivers played in the creation and development of London, the uses which have been made of them for military, domestic, commercial and recreational purposes, and the interrelation between the living conditions they create and the men who have sought to improve these conditions. Before doing so, it will be necessary to discuss the courses which these streams followed. This has a twofold purpose: firstly to form a canvas, as it were, on which the later picture may be painted, and secondly in order to correct, clarify and amplify previous accounts. It may be observed that of the fourteen definite watercourses included in this study, seven have never been really described before at all. A street-map is provided (at the end) on which the courses of the rivers are marked as accurately as possible, in order to minimise the need for tedious topographical description, but where existing accounts are inadequate, confusing or wrong, it will be necessary to go into some detail.

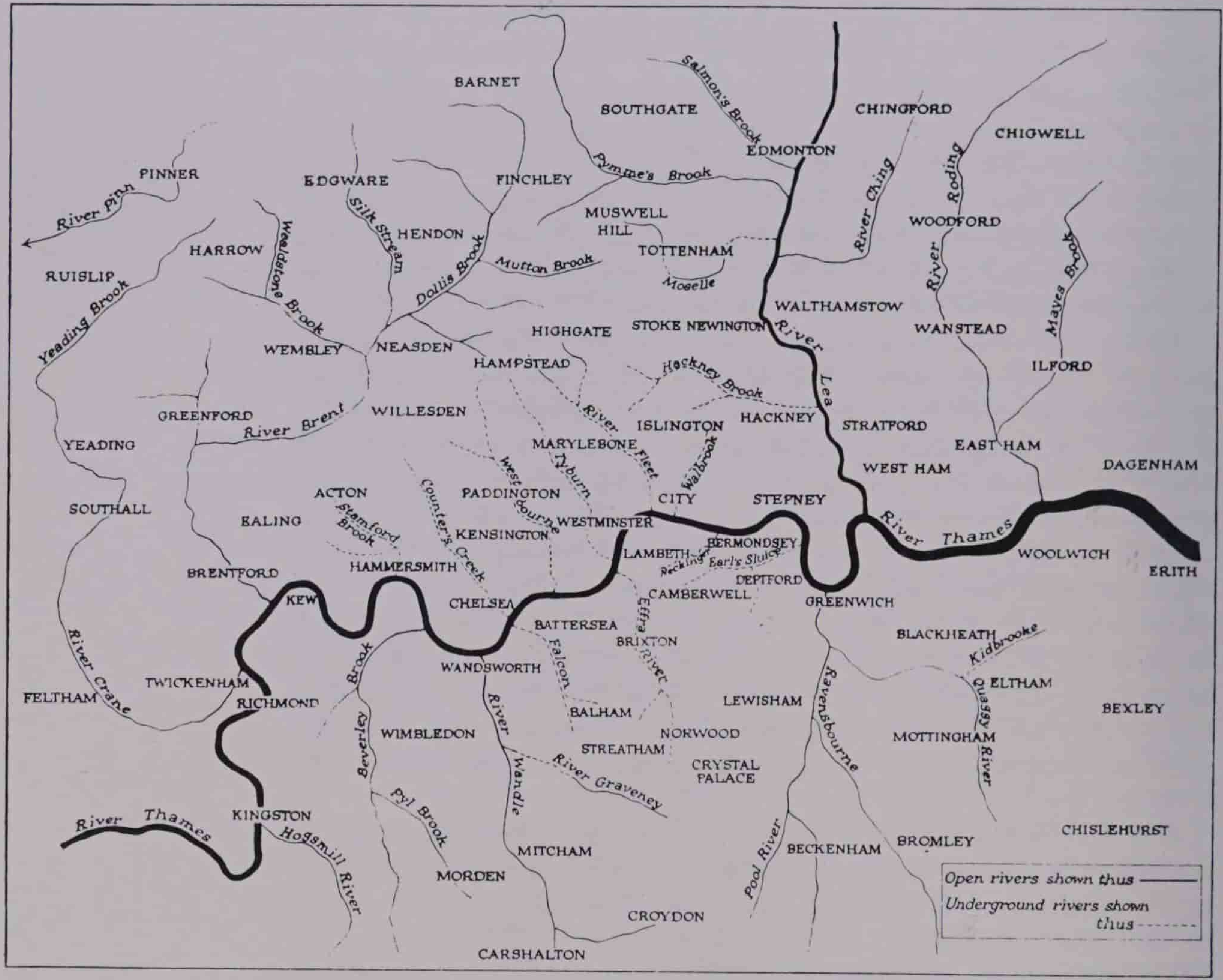
The London Basin

London lies in the lower part of the Thames valley. The central part of this area consists of the alluvial 'flood plain', which has been formed by the Thames, and through which it makes its way in great sweeping curves. This flood plain is two to three miles wide and is nowhere more than 25 feet above ordnance datum – in many places it is only 5 feet, and much of the Surrey flats, especially in such areas as Rotherhithe, still lie below the high-tide level.[4]

To the north and to the south of the flood plain the land rises on a basis of clay which varies in depth from 25 to 400 feet. It is bluish when first exposed, but soon becomes a stiff reddish-brown, and it is the bane of many suburban gardeners. In many areas this clay is covered by sands and gravels containing underground water: in the places where this covering was thicker the water was held up in the absorbent soil and erosion did not take place as quickly as in the more thinly-covered areas where the sands were steadily washed away. Thus, on the north, there stands what has been called the Hampstead-Highgate massif, rising to some 400 feet and sending out spurs in all directions. On the south side of the Thames, the higher land is arranged in a more regular but less interesting way, in a long ridge running from west to east and intersected at intervals by valleys.

Throughout this area the Thames receives small tributaries, just as it does elsewhere along its length, at intervals of not more than about three miles: these tributaries join the main river either on a straight stretch or on the outer, convex, side of one of its meanders (see Map 1). This is because the meanders of the Thames (and of any other river) are slowly but continually migrating towards the mouth of the river, as the force of water swinging round the bend cuts into the far bank. Any tributary stream which did happen to join the main river on the inner, concave, side of a meander would be picked up, as it were, by the next advancing convexity and then carried down with it.[5] It is incidentally this downward migration of meanders rather than flooding which is largely responsible for the formation of the 'flood plain' described above: as the meanders advance downwards they gradually move over the whole area of the central part of the valley, depositing a smooth layer of alluvial silt as they go. With smaller rivers such as the tributaries of the Thames, flooding plays a larger part and the term 'flood-plain' is more appropriate.

Patrick Nunn[6] noticed the unusual way in which some tributaries join the Thames, from opposite sides, at almost the same point: for example Counter's Creek opposite the Falcon, and the southern arm of the Tyburn opposite the Effra (see Map 1). He believed that the Thames originally took a more southerly line than it does now and


BARNET
SOUTHGATE
Salmon's Brook
EDMONTON
CHINGFORD
CHIGWELL
PINNER
River Pinn
EDGWARE
FINCHLEY
Pymme's Brook
RUISLIP
HARROW
Silk Stream
HENDON
MUSWELL HILL
TOTTENHAM
River Ching
WOODFORD
River Roding
Yeading Brook
Wealdstone Brook
Dollis Brook
Mutton Brook
Moselle
WALTHAMSTOW
Mayes Brook
WEMBLEY
NEASDEN
HIGHGATE
STOKE NEWINGTON
River Lea
WANSTEAD
HAMPSTEAD
Hackney Brook
ILFORD
GREENFORD
River Brent
WILLESDEN
River Fleet
ISLINGTON
HACKNEY
STRATFORD
YEADING
MARYLEBONE
Tyburn
Walbrook
EAST HAM
WEST HAM
DAGENHAM
ACTON
PADDINGTON
West Bourne
CITY
STEPNEY
SOUTHALL
EALING
Stamford Brook
Counter's Creek
KENSINGTON
WESTMINSTER
River Thames
BERMONDSEY
LAMBETH
Neckinger
Earl's Sluice
WOOLWICH
ERITH
BRENTFORD
HAMMERSMITH
DEPTFORD
KEW
CHELSEA
CAMBERWELL
GREENWICH
BATTERSEA
Effra River
BRIXTON
BLACKHEATH
Kidbrooke
River Crane
Brook
WANDSWORTH
Falcon
ELTHAM
FELTHAM
TWICKENHAM
RICHMOND
BALHAM
LEWISHAM
Quaggy River
BEXLEY
WIMBLEDON
River Wandle
NORWOOD
MOTTINGHAM
Beverley
STREATHAM
Ravensbourne
CRYSTAL PALACE
River Graveney
Pyl Brook
River Thames
KINGSTON
Hogsmill River
CHISLEHURST
MITCHAM
Pool River
BECKENHAM
BROMLEY
MORDEN
CROYDON
CARSHALTON
Open rivers shown thus
Underground rivers shown thus

MAP 1. *Tributaries of the Thames from Kingston to Erith.*

that the lower part of the Earl's Sluice, running eastwards, represents that line. The Counter's Creek/Falcon and the Tyburn/Effra were each originally one stream flowing south to join this southerly course of the Thames. As the Thames migrated northwards to its present position, the flow in the southern halves of these tributaries reversed and single streams became two streams flowing in opposite directions.

In the central part of London, all these tributaries have been submerged beneath the spreading tide of the built-up area so that, although there are many tell-tale traces of their course, they are no longer visible as rivers. In the outer parts of the London area, the tributaries may still be seen, though for the most part they present rather unattractive views (Ill. 1).

Map 1 shows the courses of all the tributaries of the Thames, the major part of which in each case flows through the built-up area of London. That there is no hard-and-fast distinction between those which are buried and those which are not, may be seen in the history

1. The Wandle at Earlsfield, once described by Pope as 'the blue transparent Vandalis'

of the Wandle, which 'particularly seems to resent being buried alive',[7] and now has been left in peace to pursue its unbeautiful course down to Wandsworth. In addition, some of these streams are partly buried and partly not, and who can say that in a few years they will not be as much lost as their historically more distinguished predecessors? For these reasons I shall not hesitate to give examples drawn from these outer streams, but I shall give no description of their courses since these can easily be determined by examining any large-scale map of the London area.

NOTES

1. 'Dictator', i.e. the person who dealt with his correspondence.
2. The 'Description of London' is given separately by several early writers on London – the passage here quoted is that from Stow.
3. Foord. This author must be given credit for attempting to cover the whole subject (though he does not succeed) and for contributing useful and original matter on the streams south of the Thames, but on the whole his book suffers from the usual defects of old local histories in that it is neither accurate nor interesting. The illustrations are poor, and there are no maps. (For details of this and other references see the Appendices.)
4. See Ormsby, whose most unusual and interesting book deserves to be far better known than it is. It contains much relevant information on the lost rivers.

   The earliest study of the physical site of London seems to be that of Loftie, which contains a layer-tinted contour map showing the lost streams, for which the material seems to be derived from the studies of J.G. Waller (*vide infra*). There are also reproductions of various old maps, including the valuable and neglected map of the Environs of London by Rocque, 1743. (This is to be distinguished from his well-known map of London.)
5. The classical examples of these processes relate to the Mississippi: see Wooldridge and Morgan (1959). I am also indebted to Professor Wooldridge for a personal explanation.
6. Personal communication, 1978.
7. Ormsby.

Five miles meandering with a mazy motion
Through wood and dale the sacred river ran,
Then reach'd the caverns measureless to man,
And sank in tumult to a lifeless ocean.

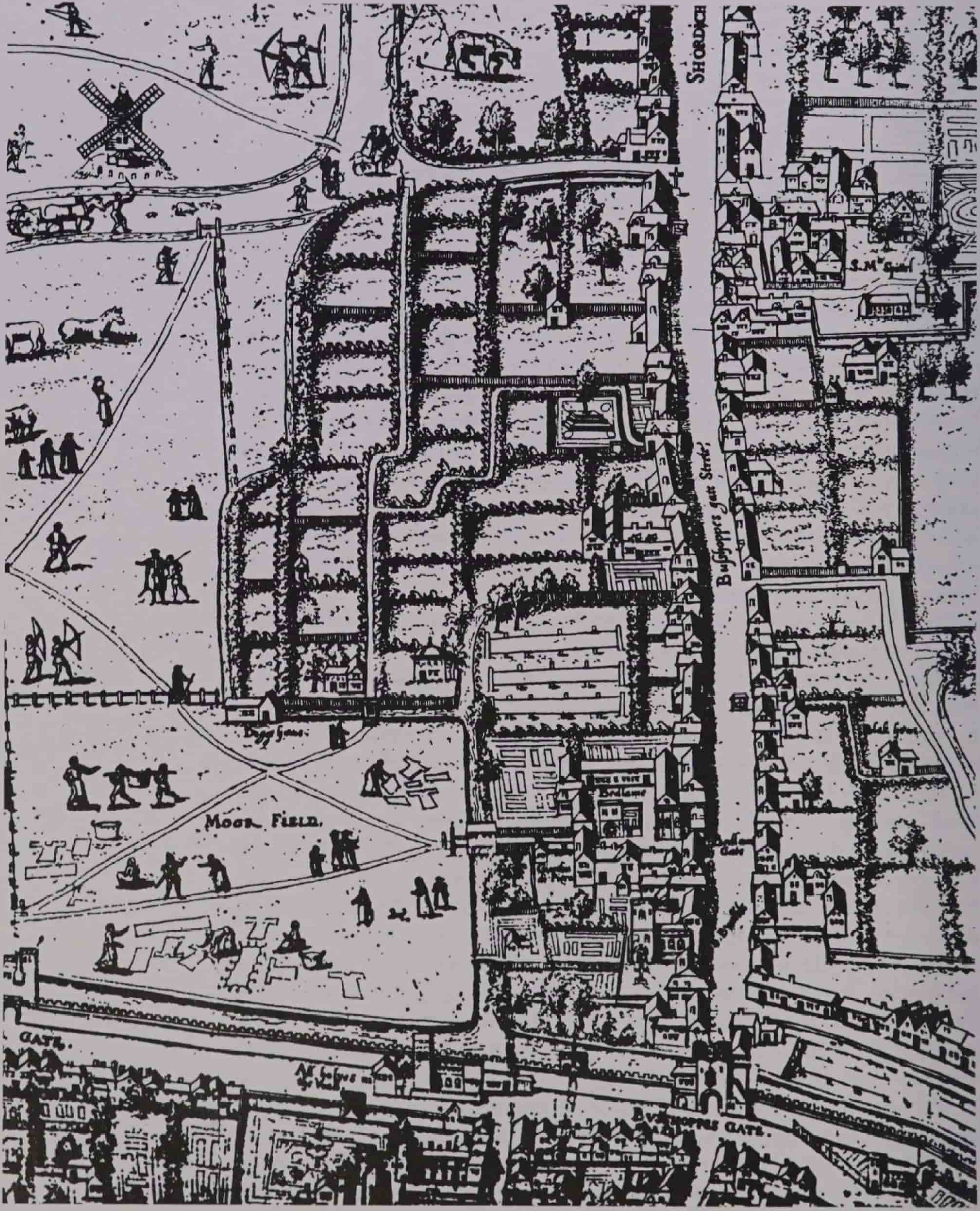
Samuel Taylor Coleridge

Chapter One

THE WALBROOK

JOHN STOW, the most famous of all historians of London,[1] wrote of the Walbrook in 1598: 'This water-course, having divers bridges, was afterwards vaulted over with brick, and paved level with the streets and lanes where through it passed; and since that, also houses have been built thereon, so that the course of Walbrooke is now hidden underground, and thereby hardly known.' It is not to be expected that the passage of 350 years will have made it any more easily known, and there has been and is a great deal of doubt and confusion as to its exact course, but enough information exists on which to base an account accurate to within 10 yards or so, which is quite adequate for our present purpose.

Trench and Hillman state, but without any reference or evidence, that the Walbrook was formed by the junction of two streams, one arising in Islington and the other in Hoxton. Most authorities consider that the Walbrook arose in a large swamp called Moorfields, lying immediately to the north of the City Wall. Professor Grimes's excavations[2] have shown that even in the Roman period this was little better than a bog, although it is possible that the construction of the Wall made it worse, by interfering with its drainage. Fitzstephen describes it as 'a great marsh or sheet of water washing the walls of the City on the north side'. It is evident from a lawsuit of the early fourteenth century[3] that there was still enough water on the surface or in drainage ditches to float a boat with six passengers. In these circumstances it is futile to give elaborate descriptions of many converging tributaries, for they were almost certainly artificial trenches for drainage purposes. It will be enough to say that from the maps of Hoefnagel and Agas the main channel seems to have been a narrow piled watercourse, crossed by little bridges, flowing down a line just west of the now-demolished Broad Street station, with a tributary joining it at right angles from the west. Porter's map shows a similar tributary from the east, and both of these are quite in accordance with the lie of the land. The line of the main stream was confirmed by the discovery of piles and signs of bog in Blomfield Street,[4] and from the map of Ogilby and Morgan the course may be projected farther north, running down the side of Curtain Road, and bordered by a line of trees,


SHORDICH
Bushoppes gatt Strete
Dogg house
MOOR FIELD.
Bedlame
GATE.
BUSHOPPES GATE.

MAP 2. *The Moorfields area c1559. The Walbrook is shown running south just above the church of All Hallows by the Wall, apparently feeding the City ditch.*

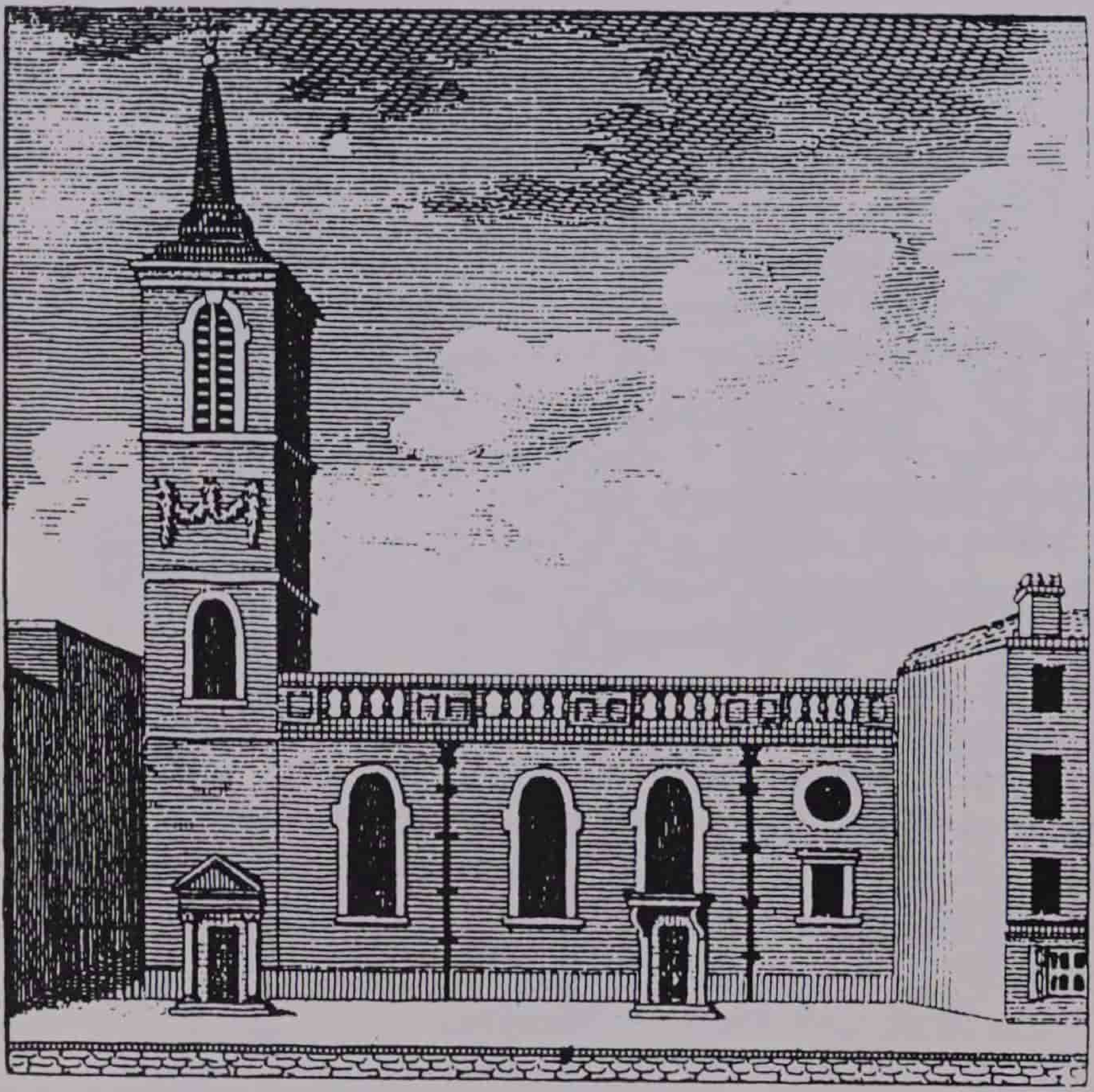
bushes or posts. This brings us almost to the site of Holywell, Shoreditch (the one referred to by Fitzstephen), and it seems possible that this was the source of the stream.

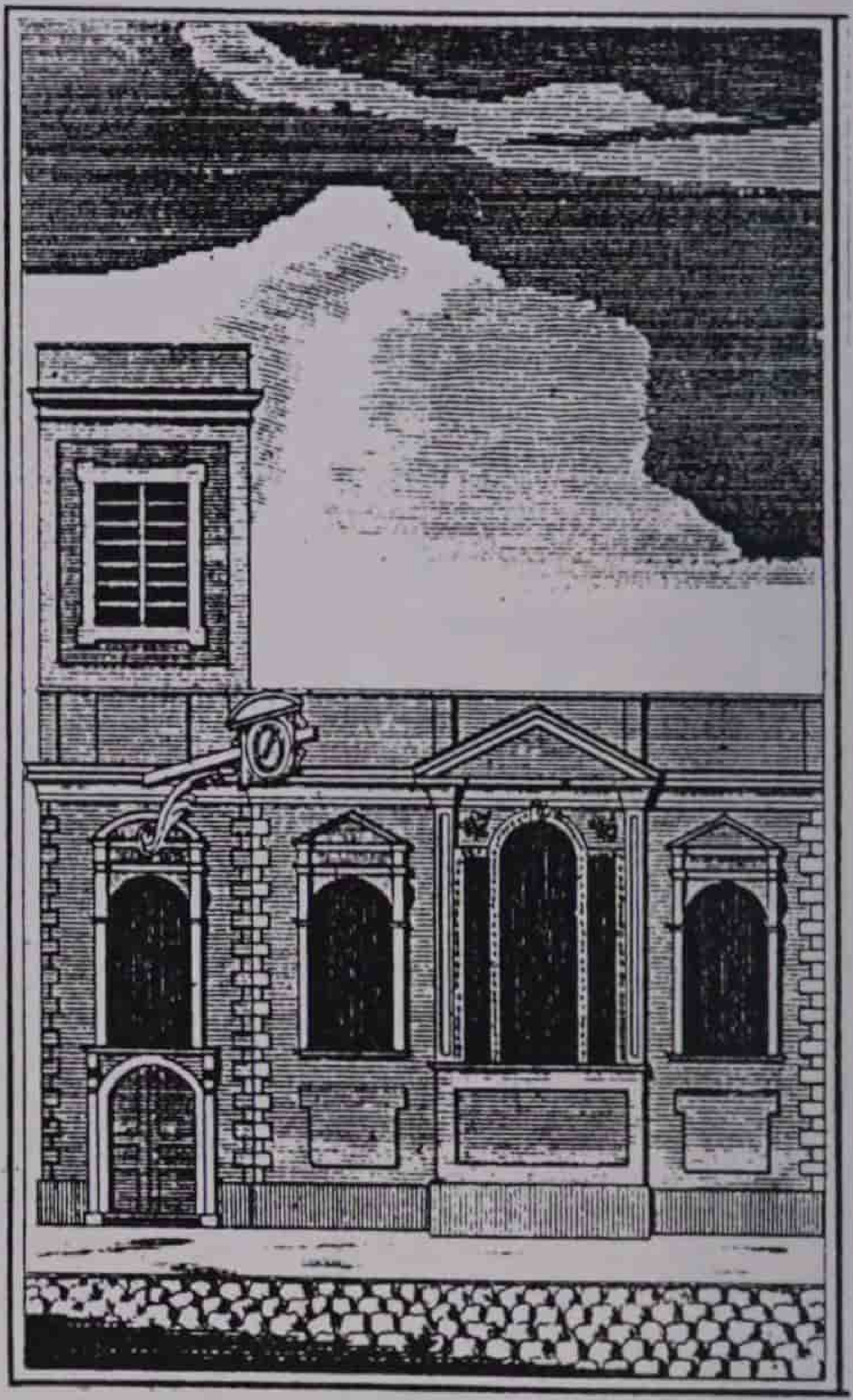
The Walbrook passed through the Wall just to the west of All Hallows-on-the-Wall church, where an aqueduct about 60 yards long was discovered running in a north-and-south direction at a depth of about 20 feet.[5] At the northern end were fixed five iron bars, arranged perpendicularly, to prevent the opening being choked by weeds. The southern end was an arch about 3½ feet high, which had evidently been above ground, since it had moss growing on it. A similar aqueduct, but with only three iron bars, and the arch collapsed, was found very close to it.[6] The date of these cannot now be stated: there are several records of such sluices being built, and presumably some such channel must have existed in Roman times.

It has been suggested, and even stated, that a western tributary ran down just east of Moorgate, passed through the Wall separately, and joined the main stream at Copthall Avenue. This rests upon a reference of Stow to an 'iron grate on the channell which runneth into the watercourse of Walbrooke before ye come to the posterne called Moorgate: and this is the farthest west part of that [Broad Street] ward', and upon a northern continuation of the boundary between Broad Street and Coleman Street wards. F. Lambert specifically looked for this watercourse during excavations in Finsbury Circus, and found no definite evidence of it. He did find traces of a stream bed running east-and-west just south of Eldon Street, with the remains of a wooden gutter in its bed: this is probably to be identified with the tributary shown by Hoefnagel and Agas.

A glance at the buildings in the City shows that almost all of them have been built since Stow's time, and in the process of laying foundations for new buildings almost the whole course of the Walbrook within the city Wall has been excavated. Unfortunately, 'those who have written on this subject in the past have not always been clear about what they were looking for, and in any case rarely saw evidence under satisfactory conditions'.[7] Thus they tended to think they had discovered the bed of the Walbrook when in fact they had found only the silt of its flood plain. However, taking these accounts in conjunction with Stow's description and other documents, most of the course can be deduced.

After passing through the Wall, the stream ran south-west[8] and was crossed by a bridge. In an *Inquisition* of 1300[9] the Prior of Holy Trinity within Aldgate was found responsible for repairing this bridge, and also 'to make the hynges of Bysoppesgate': in addition it was suggested that another bridge should be built near by. From here the Walbrook flowed south through Tokenhouse Yard to St Margaret's Lothbury, which was built on vaults over the stream, and then



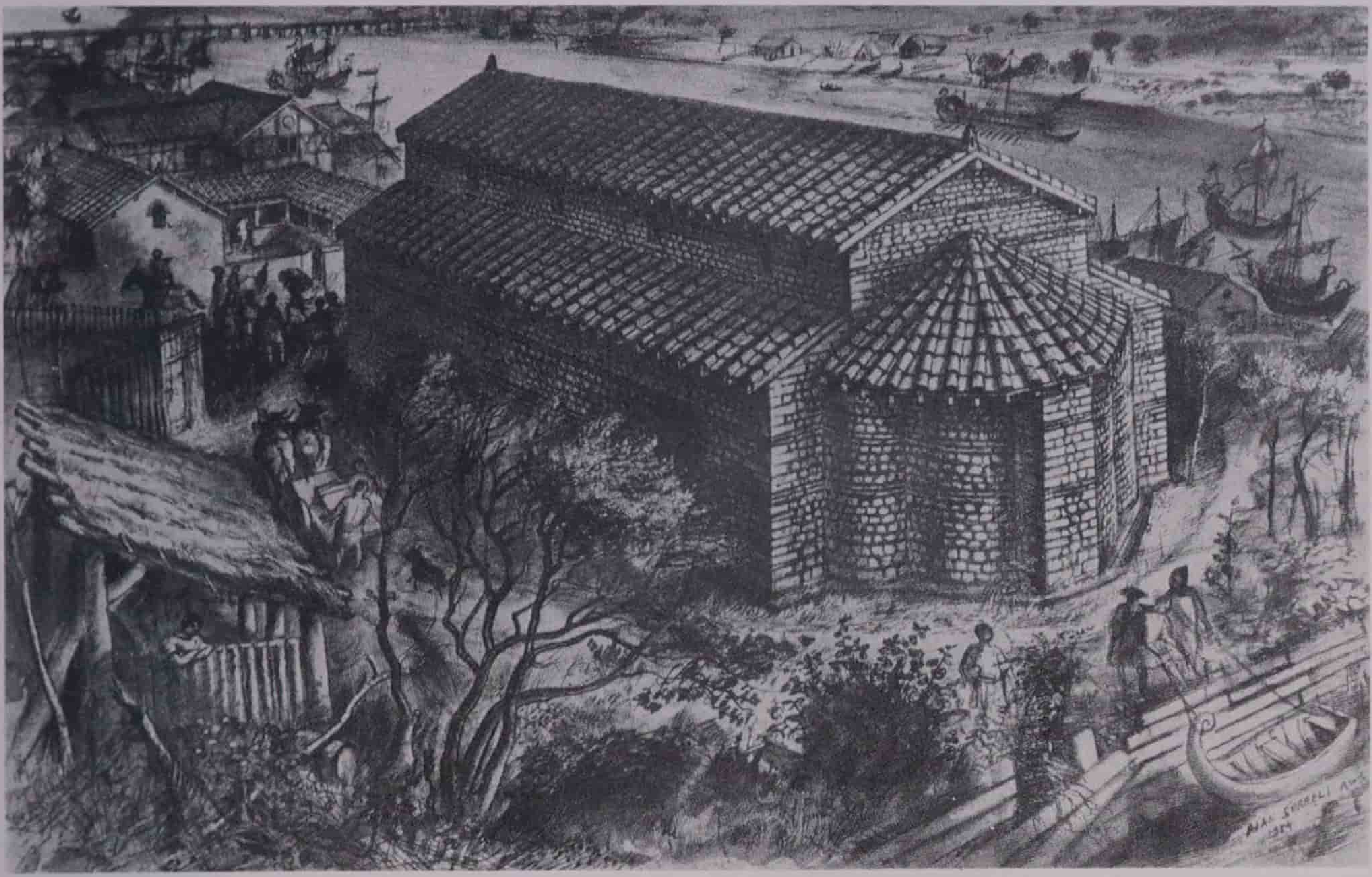


2. *St Margaret's, Lothbury, as rebuilt after the Great Fire on vaults over the Walbrook.*
3. *St Mildred's, Poultry, whose steeple was above the stream. The church was demolished in 1872.*

curved south-west again under the Bank of England, where it was seen in 1732 and again in 1803 'still trickling among the foundations of new buildings at the Bank'. Passing close to the Grocers' Hall in Princes Street, it then flowed beneath the church of St Mildred, Poultry, which was rebuilt on an arch over the Walbrook in 1456: as late as 1739 it was here described as 'a great and rapid stream…running under St Mildred's church steeple at a depth of 16 feet.[10]

From here it flowed south again[11] into the area of Bucklersbury: an *Inquisition* of 1291[12] refers to 'the bridge of Walbroke near Bokerelesberi'. This was the site of the famous Temple of Mithras, which stood alongside the stream. The excavations, under the direction of Professor Grimes, in which it was discovered, were originally made in order to obtain a cross-section of the valley of the Walbrook, and it was established that its course lay parallel to the street called Walbrook and about 50 yards to the west of it – in fact, at the lowest point of the dip, where one would expect it to be. It here flowed 'over against the wall of the chancel of the church' of St Stephen-upon-Walbrook, which formerly stood on a site to the west of its present position.[13]

Passing under Horseshoe Bridge in Cloak Lane (where it was seen in excavations by Tite), it continued south, probably with a sharp



4. A reconstruction of the London Mithraeum, with the Walbrook in the foreground.

twist, which was commemorated in the shape and name of Elbow Lane (now College Street) and in the boundary between Dowgate and Vintry Wards. Dowgate was the name of the inlet formed by the lowest part of the stream (although in very early days the Thames reached up to Thames Street) and this inlet still existed in a shortened form until 1958, just west of the Dowgate pumping station and about 40 yards from the side of Cannon Street station.

It has long been believed that the Walbrook was a large stream which was navigable at least as far as the Bank: this was alleged to be confirmed by the excavations of Tite, from which he concluded that the stream was 250 feet wide, and by the discovery of a barge at Bucklersbury, during the construction of Queen Victoria Street in 1871. It is now known that this is quite wrong; what Tite found was the flood plain of the stream and not its bed, and the so-called barge was almost certainly the plank revetments and pilings of the stream. These were constructed early during the Roman occupation to contain a stream which had probably wandered widely through a marshy area up to that time. They often had overlapping planks, like a boat, and the same mistake is made quite frequently today. In fact, the picture which emerges of the Roman Walbrook is that of 'a squalid brook flowing through an "under-developed" area of scattered wooden buildings, underpinned by wooden piles, with more permanent houses and other buildings appearing on the fringes'.[14] The stream was only 12 or 14 feet wide, and was shallow, the bottom being 32–35 feet below modern street level. There were one or two minor tributaries of the Walbrook within the city which had probably disappeared before the Romans left: what is more strange is the recent discovery that the main stream was entirely filled in and choked with rubbish about AD150.[15] It seems that a new channel, partly overlapping the old one, was made soon after, but what happened to the Walbrook, or indeed to London, after the departure of the Romans remains a matter of conjecture: on balance it seems probable that the city declined considerably, and the Walbrook was doubtless neglected and perhaps began to spread itself again.

The nature of the subsequent revival is also unknown, but throughout the Norman and Plantagenet periods there are frequent references to scouring, piling and repairing the stream and there may have been further minor changes in its course. In 1440 Robert Large, who was Mayor, contributed to its covering over when St Margaret's Lothbury was rebuilt, but it was only partly covered then, since Stow speaks of more being done in 1462. The lowest part, as we have seen, remained open much longer.

The best authorities[16] consider that the name is derived from the O.E. *Wealas*, meaning 'stream of the Briton', but it is puzzling that in 1068, when William I granted a charter to the church of St Martin-le-Grand, he called it *wylrithe*, or 'spring-rivulet', as though it had no name. One is tempted to accept Stow's etymology (though he is usually wrong on this type of thing) that it was the brook by the Wall.

NOTES

1. Sir Walter Besant (1912) gives an amusing imaginary account of a day spent in Tudor London with Stow.
2. Grimes (1952).
3. Quoted by F. Lambert (1921) in a survey of the history of Moorfields.
4. See Reader, who also gives a valuable review of previous discoveries relating to the Walbrook.
5. Roach-Smith.
6. Tite.
7. Professor Grimes, in a letter which he very kindly wrote to me.
8. Colonel Lane-Fox found piles in this area in 1867, but wrongly interpreted them as evidence of a lake-village, similar to Glastonbury. In later years, however (when he had most confusingly become General Pitt-Rivers), he developed the scientific techniques which are the foundation of modern archaeology.
9. 19 Edw. I
10. Maitland.
11. Price.
12. 19 Edw. I.
13. 28 Edw. I (1300): it was moved in 1429.
14. Grimes.
15. Mr Norman Cook, Keeper of the Guildhall Museum, in a personal communication. The date is established from a large number of coins found among the rubbish.
16. Such as Ekwall.

Chapter Two

THE FLEET

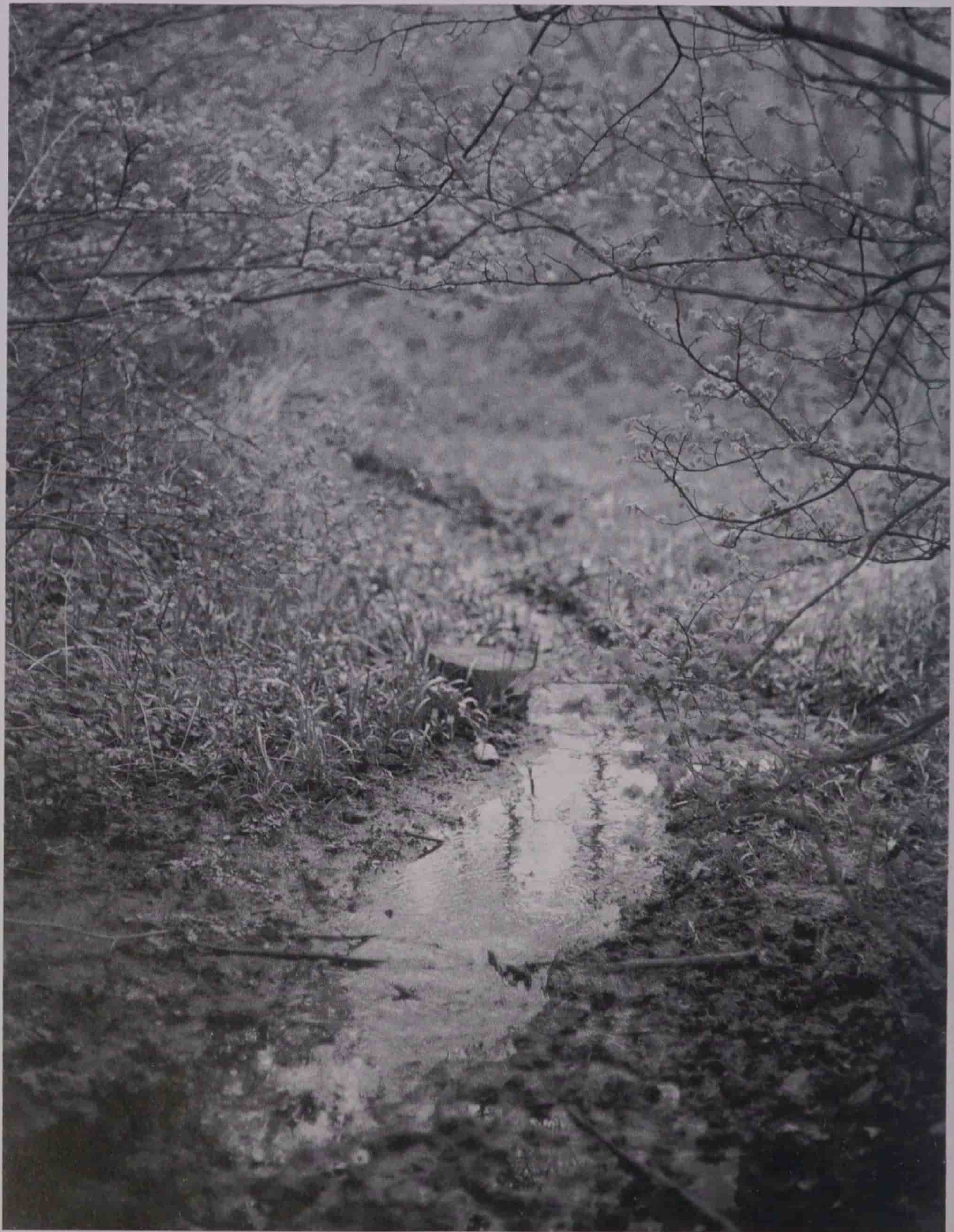
THE FLEET RIVER, although it was later known by the less imposing name of Fleet Ditch, was the largest and most important of London's lost rivers. Many Londoners are vaguely aware of its existence, and there is, by comparison with the other rivers, a large body of reliable literature upon it.[1] In addition, it is clearly shown in many maps.

The Fleet[2] rises on Hampstead Heath by two heads, separated by Parliament Hill. The western, or Hampstead, source is near the Vale of Health (an 18th-century name and not the result, as legend has it, of being a refuge for people fleeing from the Great Plague of 1665), and forms the Hampstead Ponds before going underground near Hampstead Heath station and running down the line of Fleet Road to Camden Town. We may observe that this part of the Fleet engaged the attention of one of our most distinguished literary figures, for it is recorded in the transactions of the Pickwick Club for 12 May 1827 'that this Association has heard read, with feelings of unmingled satisfaction, and unqualified approval, the paper communicated by Samuel Pickwick, Esq., G.C., M.P.C., entitled "Speculations on the Source of the Hampstead Ponds, with some observations on the Theory of Tittlebats"'.

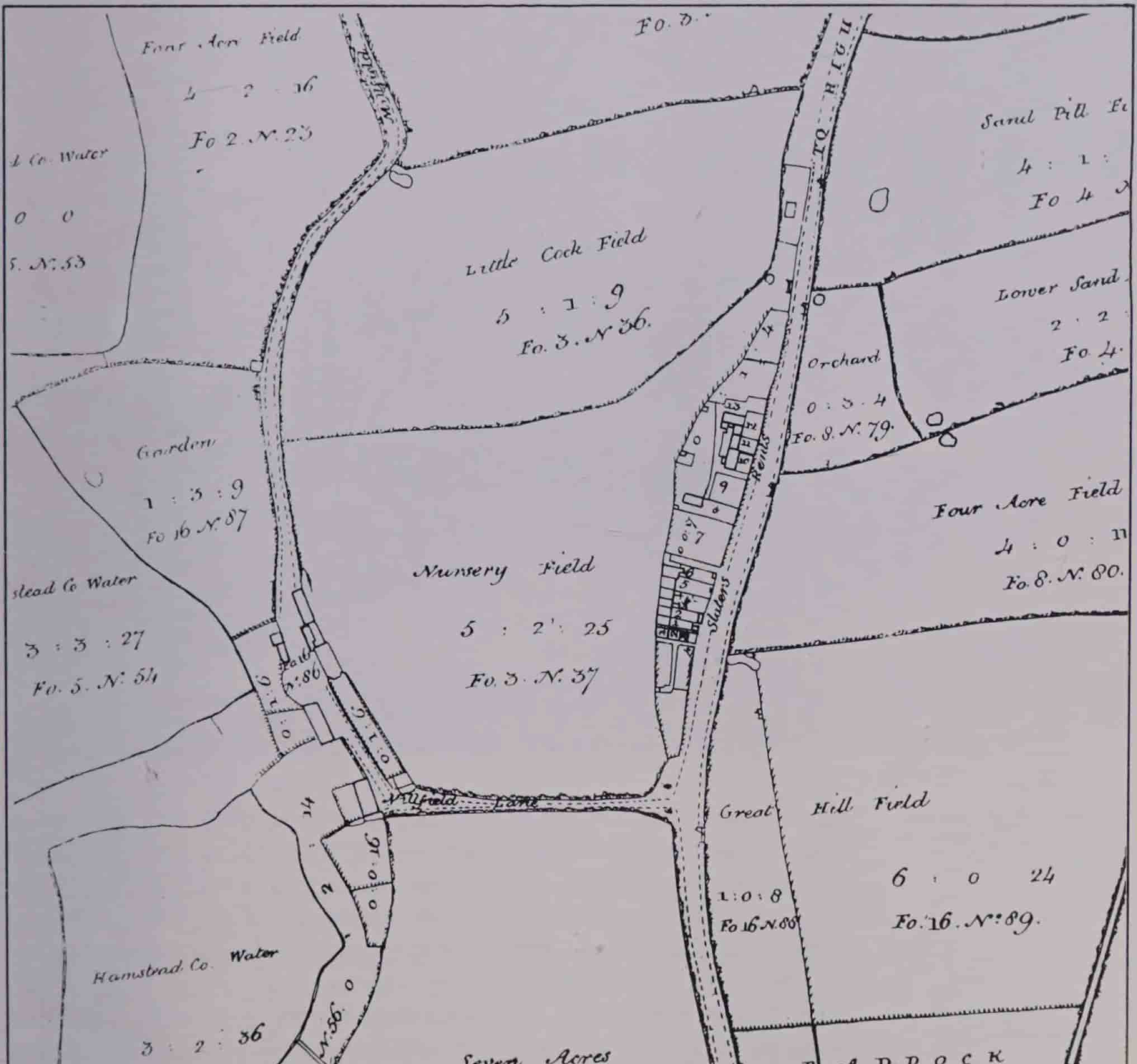
The eastern, or Highgate, source is in the grounds of Kenwood House, whence the stream flows southwards, forms the chain of Highgate ponds, and after a sweep round to the east (Map 3) curves back to the west and crosses the Highgate Road.

At this point it was 13 feet wide at flood, according to the report of a Committee of Magistrates on the Public Bridges of Middlesex in 1825. Near here it was joined by a small tributary from Gospel Oak, and it is probable that when the area around Fleet Road was built upon, an attempt was made to divert the waters of the Hampstead stream along an eastbound canal to join this little tributary. Lord Nelson, who occasionally stayed with his uncle, William Suckling, in a house near the Castle Inn, Kentish Town, on the bank of the Fleet did so, it was said, 'in order to keep an eye on the Fleet'.

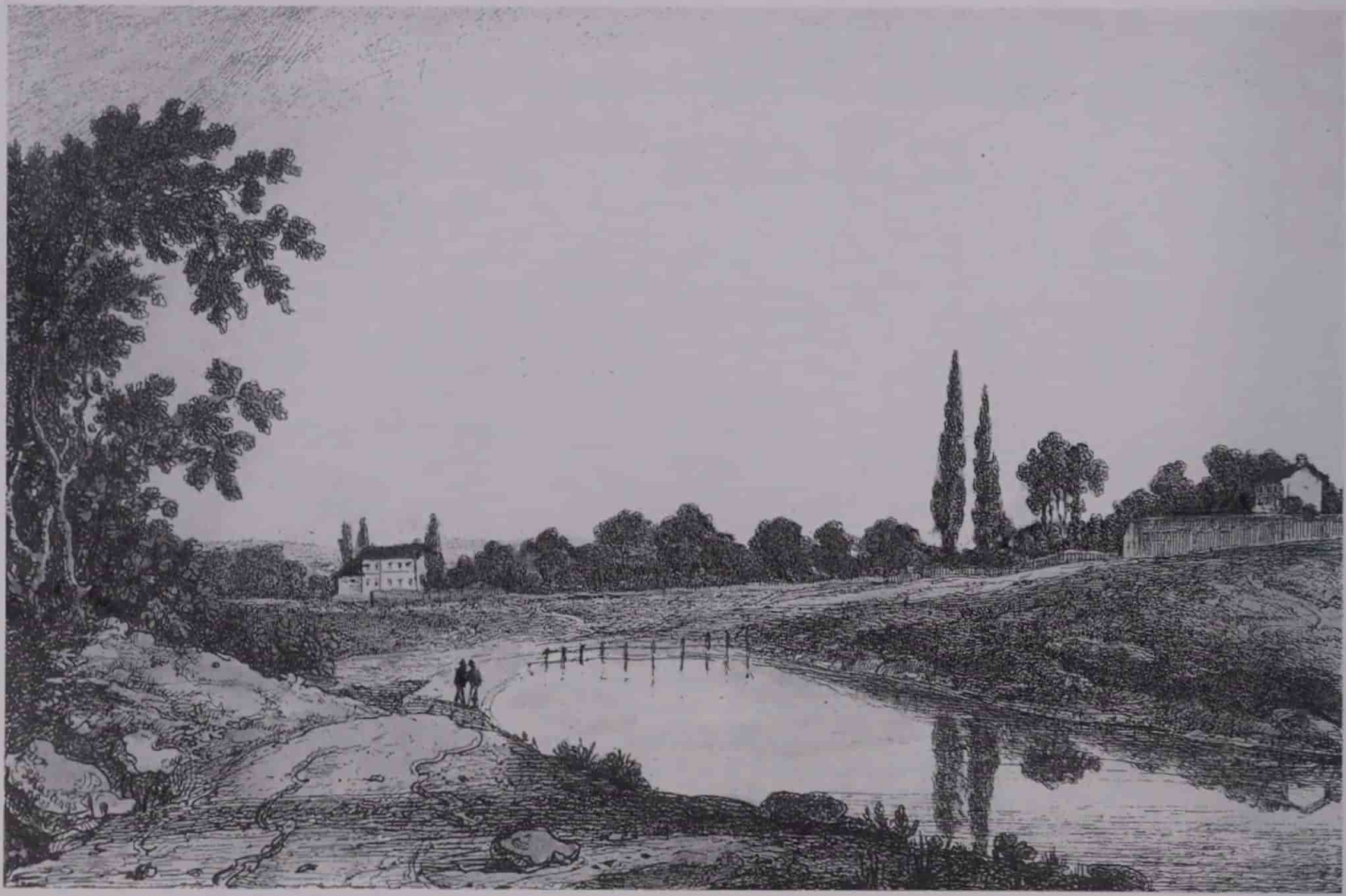
The two main sources united just north of Camden Town, forming a stream which was 65 feet wide at flood in 1826 where it crossed under Kentish Town Road. An anchor has been found in the bed of



5. *Source of the River Fleet in the Vale of Health, Hampstead, in 1992.*


Four Acre Field
4 : 2 : 16
Fo 2. N. 23
Fo. 3.
Co. Water
0 0
5. N. 53
Little Cock Field
5 : 1 : 9
Fo. 3. N 36.
Sand Pitt Fi
4 : 1 :
Fo 4
Lower Sand
2 : 2
Fo 4.
Orchard
0 : 3 : 4
Fo. 8. N. 79.
Garden
1 : 3 : 9
Fo 16 N. 87
Four Acre Field
4 : 0 : 11
Fo. 8. N. 80.
Nursery Field
5 : 2 : 25
Fo. 3. N. 37
stead Co Water
3 : 3 : 27
Fo. 5. N. 54
Millfield Lane
Great Hill Field
6 : 0 : 24
Fo. 16. N. 89.
1:0:8
Fo 16 N.88
Hamstead Co. Water
3 : 2 : 36
Fo 5 N. 55
Seven Acres
6 : 3 : 18
Fo. 17. N. 101
PADDOCK
0:1:36
Fo.16
N.91
1 : 3 : 8
Fo. 16. N. 92
Fo.16. N. 90

MAP 3. *One arm of the Fleet rises in the grounds of Kenwood House, Highgate and goes through a series of ponds, constructed as reservoirs at the turn of the 18th century by the Hampstead Water Company as part of an attempt to bring fresh supplies of water to the City. In this map of c1800 the Fleet can be seen at the bottom after leaving the last pond, and it then crosses the road at the foot of today's Highgate West Hill into Swains Lane.*

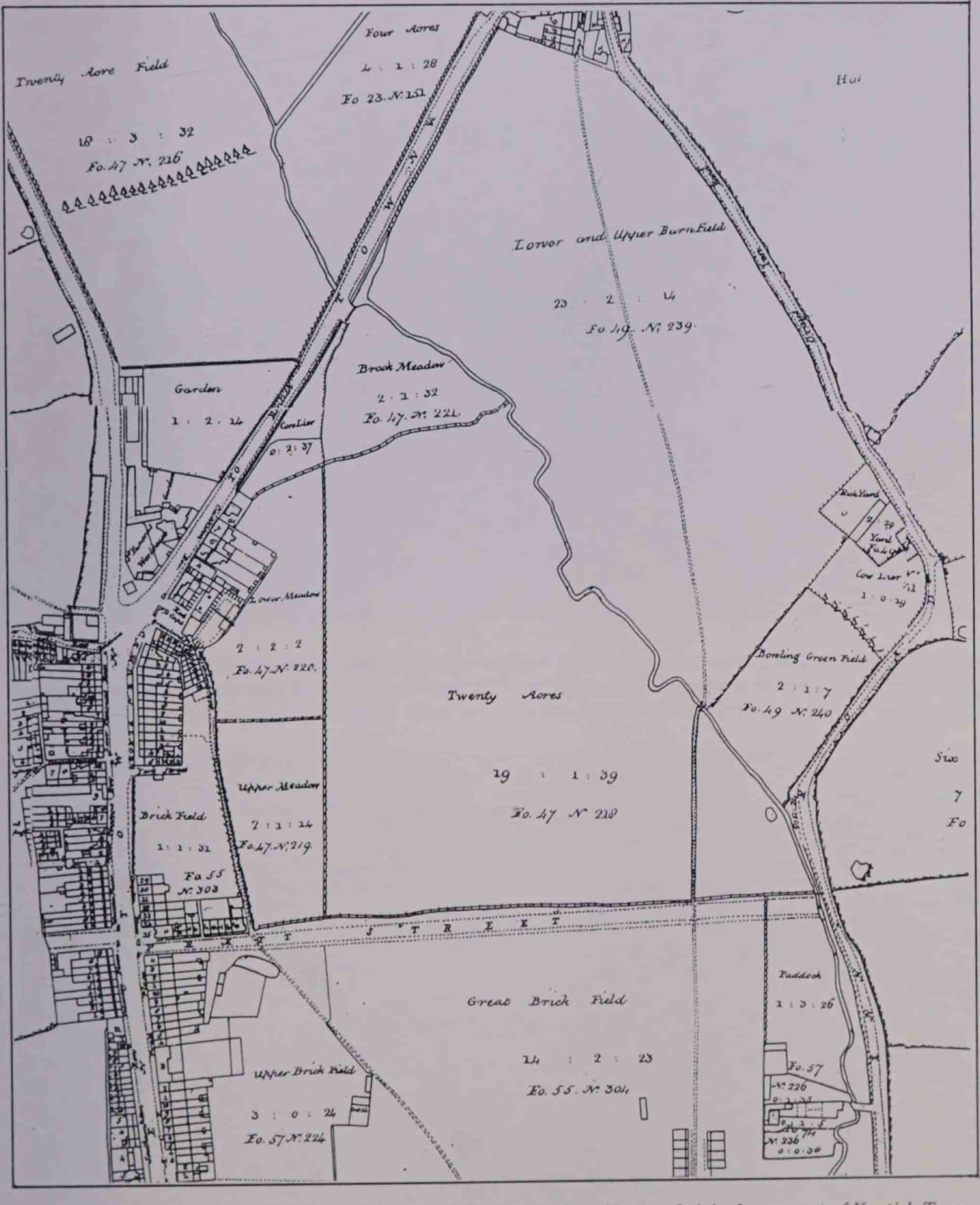


6. The Vale of Health, Hampstead, in 1825.

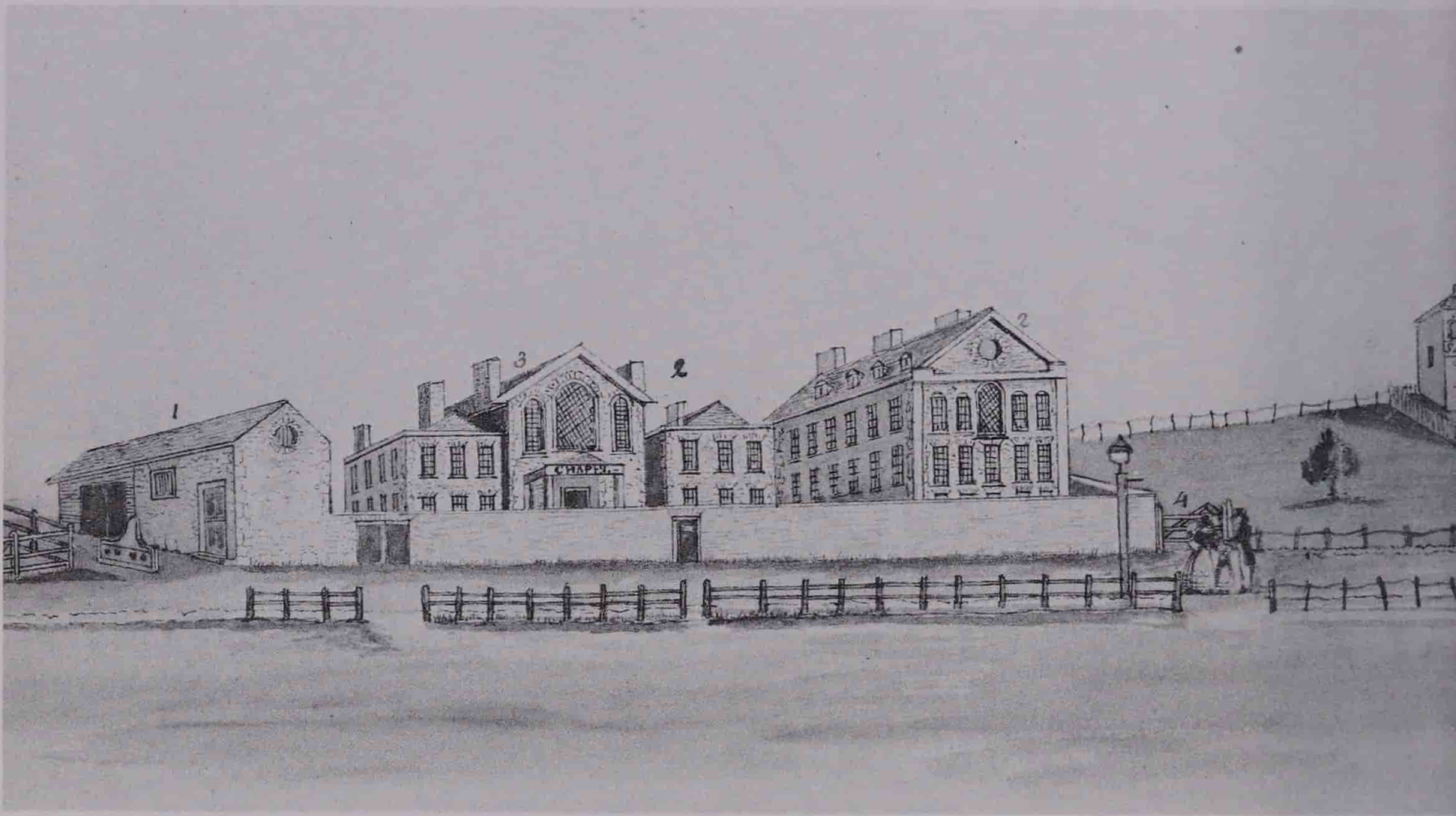
the river near here, so it may have been navigable for small boats even as far up as this. The Fleet crosses *under* the Regent's Canal, which shows the change in level which has taken place: the Fleet is 25 feet below street level in some places. It continued south past old St Pancras Church (Ill. 61) and through a low-lying unsavoury district called the Brill to Battle Bridge, now King's Cross.

The bridge was of one brick arch over the Fleet, now incorporated in the Fleet sewer, but the battle remains obscure, since the tradition that it was where Boadicea was defeated is obviously incompatible with the account of Tacitus. In any case, the earlier form of Battle Bridge was Bradeford Bridge. Near here, the Fleet received a tributary from the west, which is shown forming a pond beside Upper Woburn Place in a picture in the Crace Collection.[3]

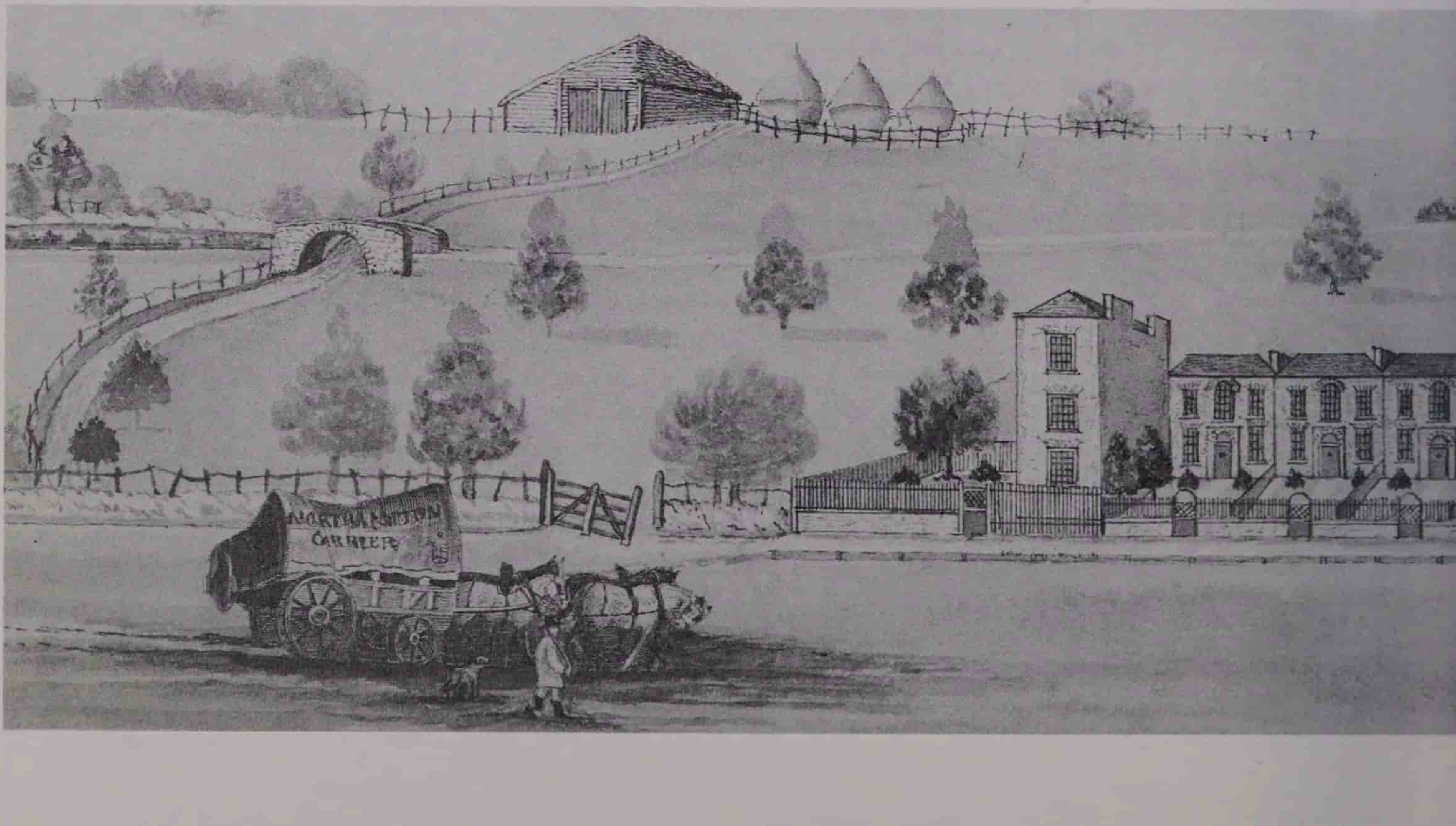
From here onwards the valley of the river is even today increasingly obvious, lying in the upper part rather west of King's Cross Road, and lower down almost exactly in the line of Farringdon Road and spanned by the Holborn Viaduct. This lower part of the Fleet received two tributaries. One came from the west, and was employed in 1577 by William Lambe, Gentleman of the King's Chapel, together with several other springs in the area, as a source for a conduit. As late as 1800, an octogenarian clergyman could remember being sent into the

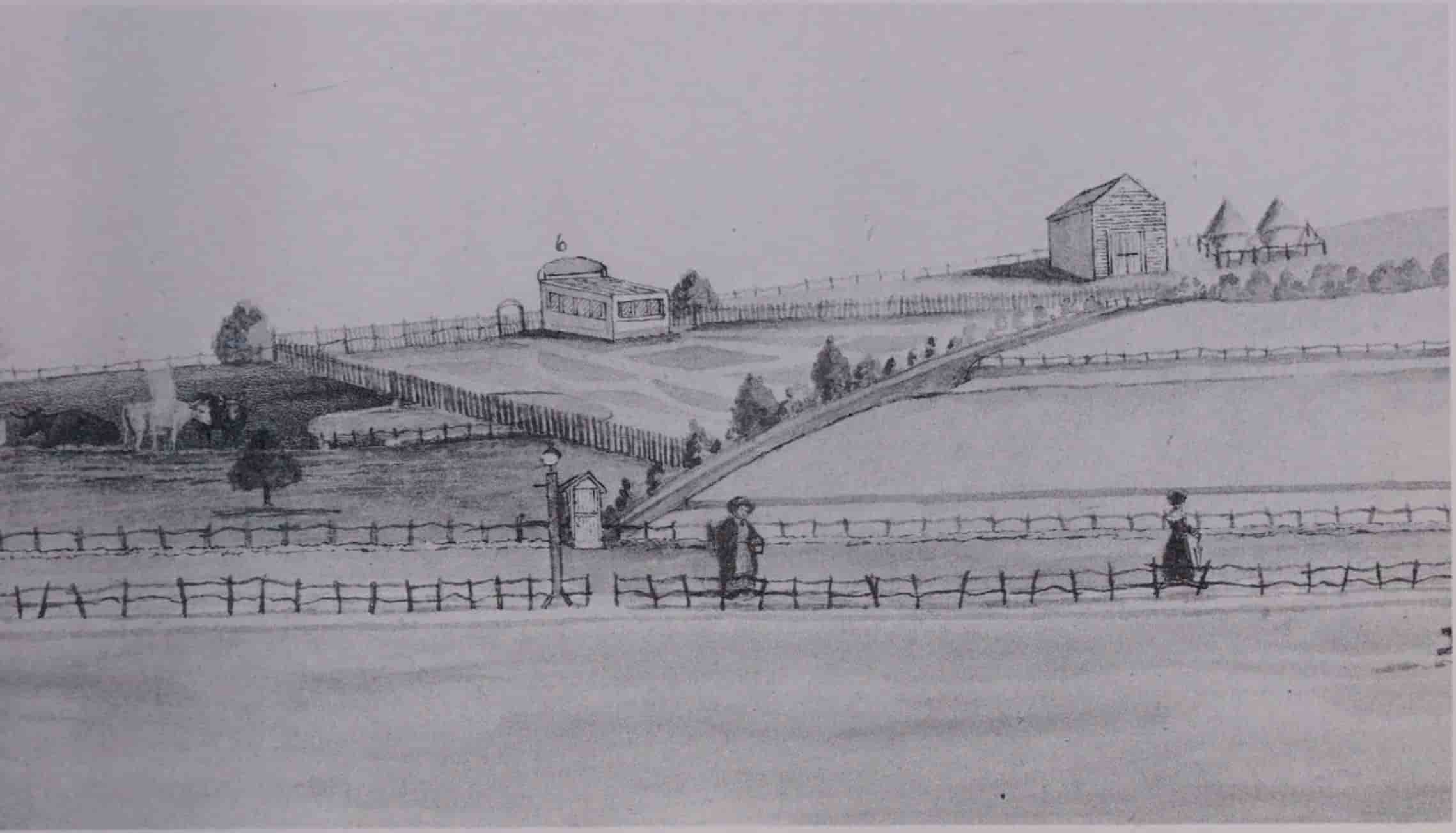

Twenty Acre Field
18 : 3 : 32
Fo. 47 N. 216
Four Acres
4 : 1 : 28
Fo 23. N. 151
TOWN
Lower and Upper Barn Field
23 : 2 : 14
Fo. 49. N. 239.
Brook Meadow
2 : 1 : 32
Fo. 47. N. 221.
Garden
1 : 2 : 24
0 : 2 : 37
Lower Meadow
2 : 2 : 2
Fo. 47. N. 220.
Twenty Acres
19 : 1 : 39
Fo. 47 N. 218
Upper Meadow
2 : 1 : 24
Fo. 47. N. 219.
Brick Field
2 : 1 : 31
Fo 55
N. 303
Brick Yard
Yard
Cow Lier
1 : 0 : 19
Bowling Green Field
2 : 1 : 7
Fo. 49 N. 240
Six
7
Fo
STREET
Great Brick Field
14 : 2 : 23
Fo. 55. N. 304
Upper Brick Field
3 : 0 : 24
Fo. 57 N. 224
Paddock
1 : 3 : 26
Fo. 57
N. 226
N. 236
0 : 0 : 36

MAP 4. *The two arms of the Fleet, from the Vale of Health and from Kenwood, join forces west of Kentish Town Road, to the right of Twenty Acre Field, just north of Camden Town. It then runs beneath the road, past Brook Meadow, on its way to St Pancras.*

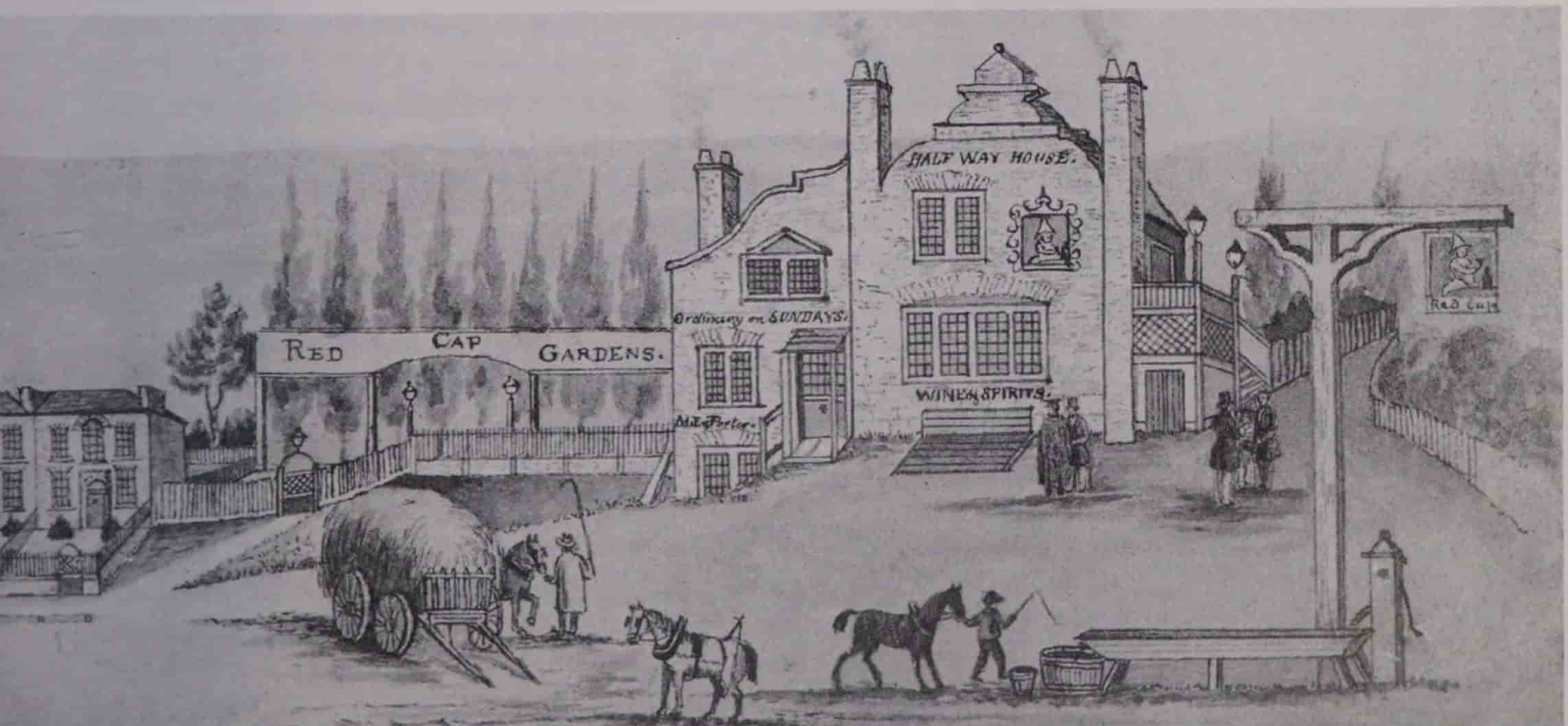


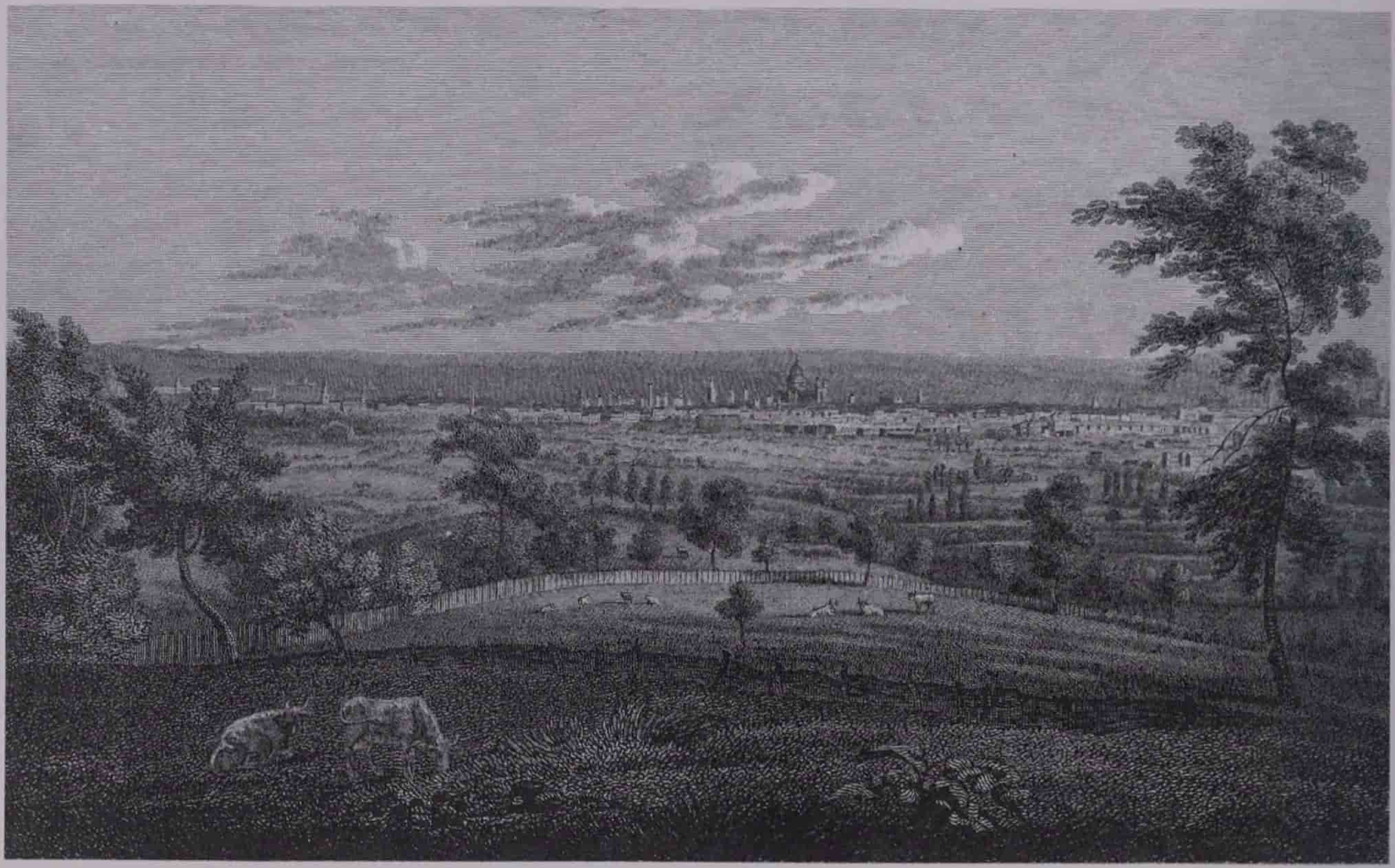
7 (above) and 8 (below) are illustrations taken from what is called the King Panorama of Kentish Town, two long scrolls of drawings of the main streets in the area c1800. These two views show the Fleet crossing beneath Kentish Town Road as seen on Map 4. In the top picture the river is to the right sweeping at an angle to the





north west. The building on the far left is St Pancras Workhouse, on the site of today's Camden Town underground station. The view below shows the Fleet going across the fields to St Pancras Way. The Mother Red Cap pub in Camden Town is to the right.


RED CAP GARDENS.
HALF WAY HOUSE.
Ordinary on SUNDAYS.
WINES & SPIRITS.
Ale & Porter.
Red Cap

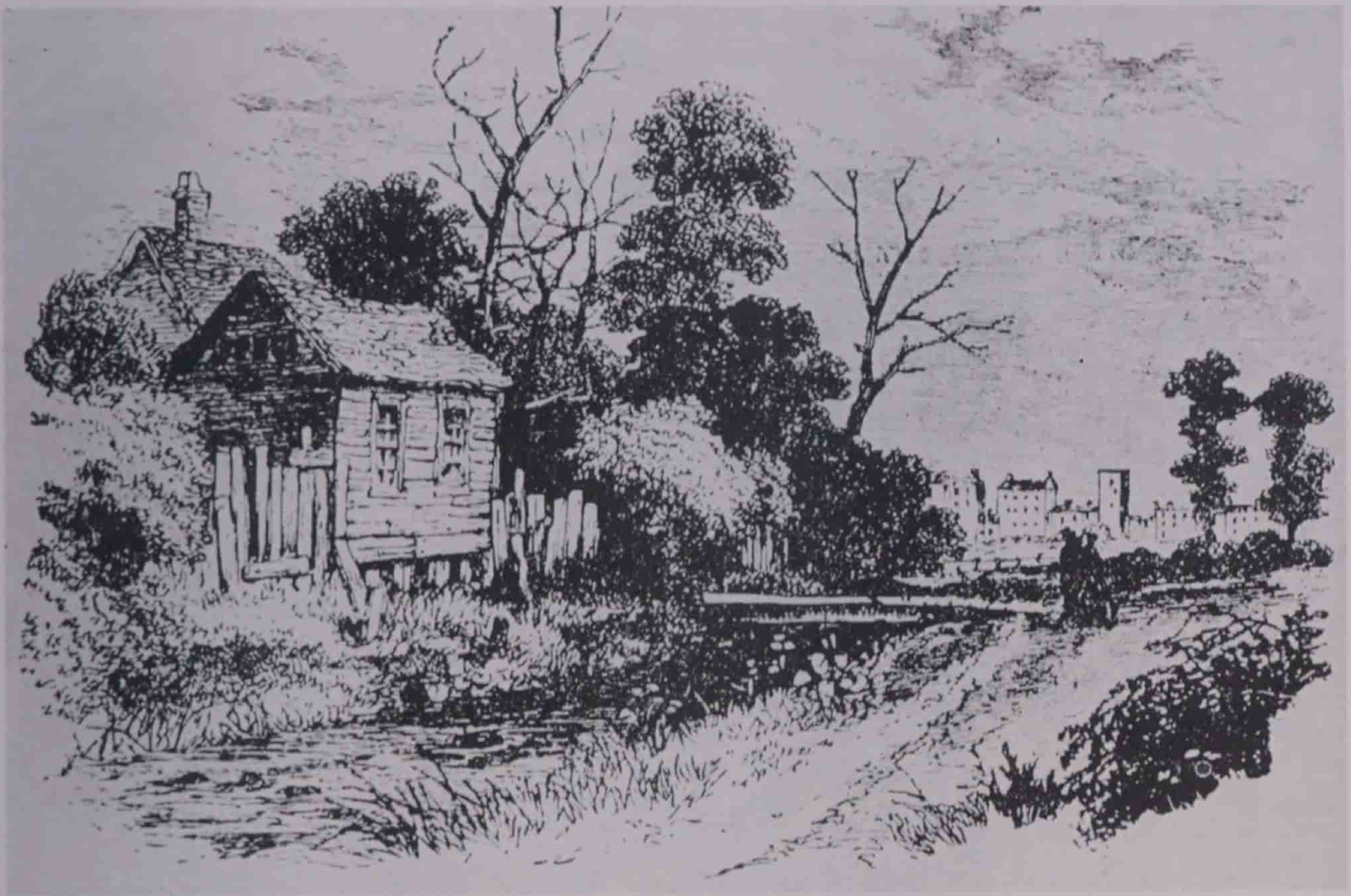


9. A view of London 1797, showing the valley of the Fleet river. The artist was probably standing on the site of old Highgate Cemetery. St Paul's may be seen in the centre background.

country as a boy to convalesce after an attack of smallpox, to a row of houses on the west side of the present Lamb's Conduit Street. All the space before him was open fields, a streamlet of water ran under his window, and he saw a man who sprung a snipe near to the window and shot it.[4] The other tributary came from the east, near the Charterhouse. In 1197 certain lands were described as lying in this area '*super rivulum de Fackeswell*' and others as lying between that brook and 'chickennlane'. The bed of a stream was discovered in 1924 at Nos. 70–77 Cowcross Street, and what was believed to be the well itself at No. 81.[5] Probably the stream contributed to the drainage of Moorfields.

Stow describes five bridges over the lower part of the Fleet: 'Fleet Bridge[6] in the west without Ludgate, a bridge of stone, fair coped on either side with iron pikes; on the which, towards the south, be also certain lanthorns of stone, for lights to be placed in the winter evenings, for commodity of travellers...It seemeth this last bridge to be made or repaired at the charges of John Wels, mayor in the year 1431, for on the coping is engraven Wels embraced by angels, like as on the standard in Cheape, which he also built.

'Oldbourne bridge, over the said river of the Wels more towards the north, was so called, of a bourn that sometimes ran down Oldbourne

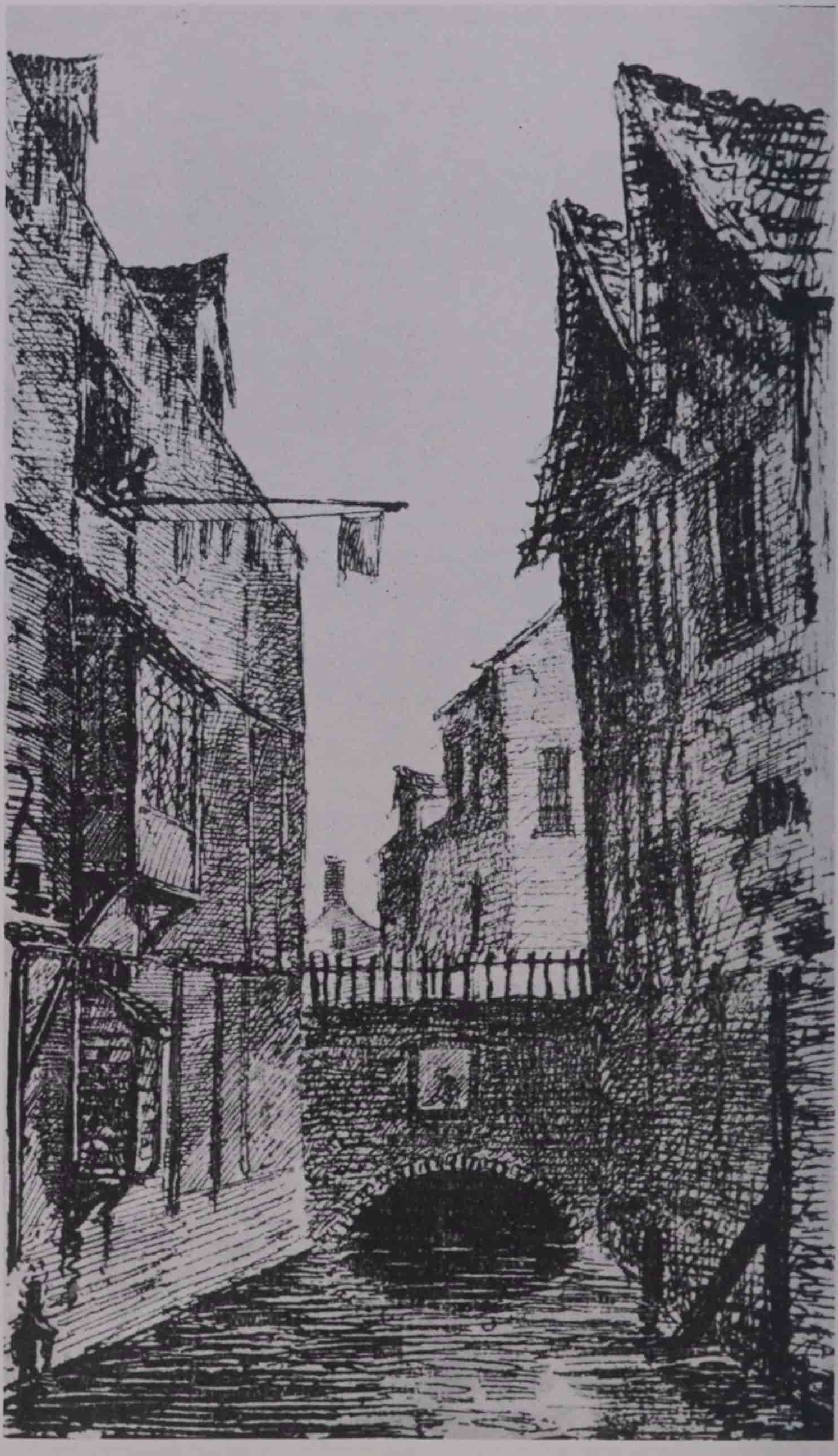


10. The Fleet river in 1825 near St Pancras.

hill into the said river.[7] This bridge of stone…serveth for passengers with carriage or otherwise, from Newgate toward the west and by the north (Ill. 11).

'Cowbridge, more north, over the same water by Cowbridge or Cowlane:[8] this bridge being lately decayed, another of timber is made somewhat more north, by Chick Lane, etc…But one other there is of timber between the precinct of the Blackfriars, and the house of Bridewell.' The monastery of the Blackfriars (Dominicans) was on the east side, and had been rebuilt by Henry VIII. The wooden bridge connecting them was constructed for the visit of the Emperor Charles V in 1522.

The history of the Fleet River has been described as a decline from a river to a brook, from a brook to a ditch, and from a ditch to a drain. It is therefore not surprising that when the Romans came to London it was a tidal inlet perhaps 600 feet wide at its mouth.[9] On its east was a steep gravel hill, but to the west was a wide strip of marsh known as London Fen: this was later reclaimed by energetic bodies such as the Knights Templar who owned the land. There seems to be little doubt that the name 'Fleet', which is frequently found along the Thames, is an Anglo-Saxon word meaning a tidal inlet, capable of floating boats. It should strictly, therefore, be applied only to this wide lower part



11. *Holborn Bridge on the Fleet. Sketch by Anthony Crosby from an older picture of unknown date.*

below Holborn Bridge. An alternative name by which the river was known was the Hole-bourne, or stream in the hollow, referring to the deep valley of the lower part of its course. It was also called the River of Wells, and Turnmill Brook (for reasons which are discussed below), in the days before it began to be the recipient of various less pleasant descriptions.

NOTES

1. The fullest is Ashton's book: this is well and entertainingly written, and has many illustrations, most of which are from the Crosby Collection in the Guildhall Library. Crosby made a large number of drawings of the Fleet valley between 1830 and 1850 and intended to publish a book on it, but either the funds were not forthcoming or he died first. The actual topographical details in Ashton are derived from Waller (1875), who is one of the most accurate writers on the lost rivers.
2. This usage, as discussed below, is not strictly correct, but by now rates as a 'sturdy indefensible'.
3. Portfolio 36, Sheet 56, Number 68. The Crace is an enormous collection of over 2,000 prints and drawings of old London, kept in the British Library. The tributary is also marked on a map of the Duke of Bedford's estate in 1795.
4. *Notes and Queries*, April 1857, 2nd series, vol. 3, p. 265 (quoted by Ashton).
5. Crow. Stow speaks of 'Fagges well, near unto Smithfield by the Charterhouse, now lately dammed up'. Waller, surprisingly enough, seems to have missed this little stream.
6. At Ludgate Circus. See also p. 122 n. 7
7. This is hopelessly wrong. Oldbourne is a wrong rendering of Holborn, and it applies to the Fleet, not to a tributary of it. Furthermore, it is very doubtful that there was a watercourse running eastwards down Holborn Hill and into the Fleet: at best it was a runnel which existed only in very wet conditions. The bridge was near the present viaduct.
8. Near modern Cowcross Street.
9. Honeybourne, whose study of *The Fleet and its Neighbourhood in Early and Medieval Times* is very detailed but deals only with the river below Holborn Bridge. Howe gives a short illustrated account of the same section of the Fleet.

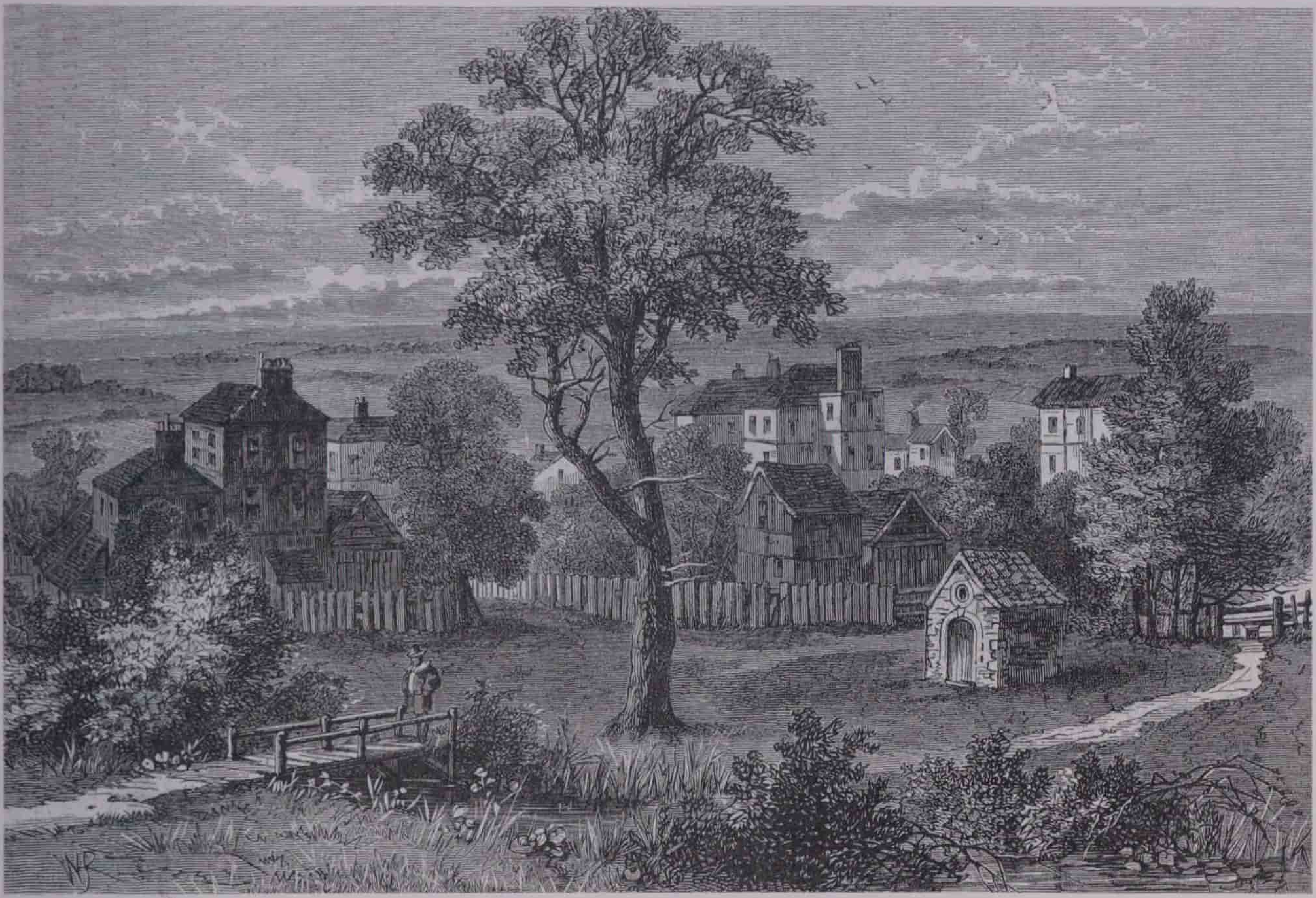
Chapter Three

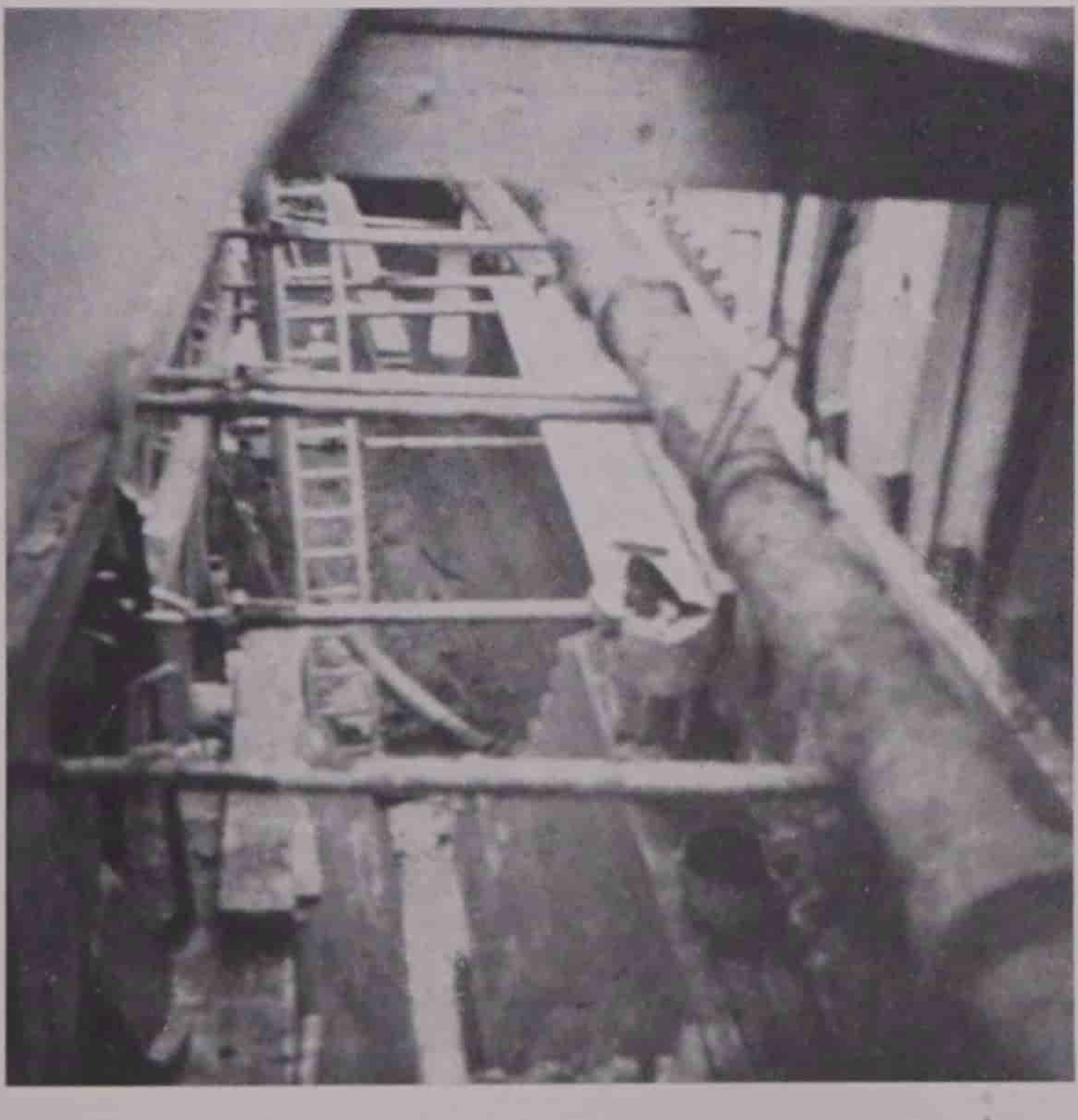
THE TYBURN

THE TYBURN was a small stream, and this fact is important in considering the problems associated with the lower part of its course. It arose[1] from the Shepherd's Well by Fitzjohns Avenue in Hampstead and flowed southwards through Swiss Cottage down to Regent's Park. Another source came from the grounds of Belsize Manor ('Bel-assis', or beautifully situated). In contrast to the Fleet, it is carried by an aqueduct *over* the Regent's Canal. Passing through the western part of Regent's Park, near Wellin's Farm, it received a tributary from the neighbourhood of the Zoo. Farther south, Marylebone Lane was originally on the left bank of the stream, and its winding line indicates the course of this part of the stream. Illustrations 12 and 13 show the contrast between the Tyburn two hundred years ago, and the muddy little stream revealed during the reconstruction of the sewer in Marylebone Lane in 1957.

There has been some confusion about where the stream crossed Oxford Street: in fact it did not follow the southernmost part of Marylebone Lane, but lay farther to the west, in what is still visible as the lowest part of the valley. In this situation it was observed by the present writer's parents on 16 February 1941, flowing through the bottom of a very deep bomb-crater. In 1236 a conduit was constructed to carry water from this part of the Tyburn to the City, and Morley Davies, in his article on this, mentions what may be the source of the confusion: 'It is evident that when the Oxford Street bridge was widened in or soon after 1737, the course of the brook was diverted some 50 feet to the west. This seems indicated by the words "turned by order of the city in 1738" on the plan of 1772, and [unless this diversion is assumed] the plans do not fit though I must admit the reason for it is far from obvious.' This bridge was probably an ancient one, but its alleged discovery while building the old Marshall & Snelgrove's store must be regarded as another instance of misinterpretation, as this is 150 yards too far east.

From here it pursued a curving course to the east of Grosvenor and Berkeley Squares. It then ran south-west beneath a passageway separating Lansdowne House, which fronted Berkeley Square, and the grounds of Devonshire House, which fronted Piccadilly. This pas-





12. Marylebone, from the site of the present Wigmore Street, showing the Tyburn in the foreground. From a print of 1750.

13. Excavations in Marylebone Lane, 1957, with the Tyburn revealed as a trickle at the bottom.

sageway is today represented by the tiny Lansdowne Passage: a correspondent,[2] born in Mayfair, recalls that her parents remarked that the Tyburn could be heard bubbling away beneath that alley. The river then crossed under Piccadilly by the Kingsbridge,[3] and ran down the dip in Green Park towards Buckingham Palace. From here onwards all is doubt.

There have been three main theories as to the original course of the lower part of the Tyburn:

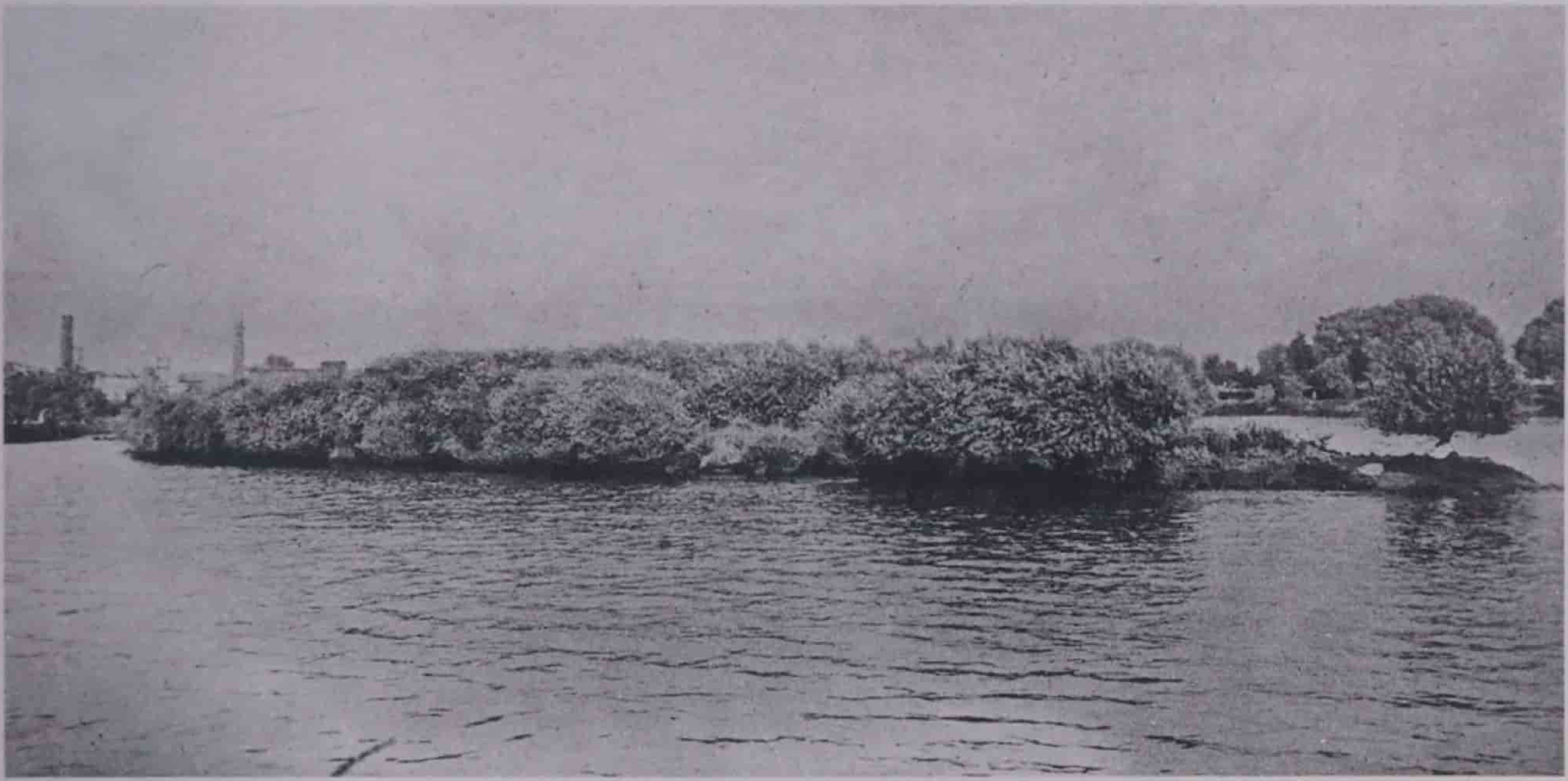
(i) It ran eastward towards Westminster and there divided into two to form a small island on which the Abbey stands. This was the view of Waller and Besant (1895).

(ii) One arm went from Buckingham Palace to Westminster, the other southwards to join the Thames near Vauxhall Bridge, thus forming a large island. This is the view favoured by Ormsby.

(iii) The stream simply flowed south from Buckingham Palace as above: no part of the stream went to Westminster, and there was, therefore, no island. This is the view taken by Wood, and is based on a very detailed study of maps and documents of the seventeenth century.

The reason for this disagreement is, of course, that there is no early map which shows the whole of this area in detail. Another problem, which does not seem to have been considered previously, is the curious reluctance of persons needing water in the Westminster area to use the Tyburn: thus the water-supply for the monks of the Abbey,[4] for the original Rosamund's Pond in St James's Park,[5] and for the Chelsea Waterworks reservoir in the Green Park[6] was all derived from the Westbourne in Hyde Park. It has been stated that the long canal in St James's Park, later landscaped into the present lake by Nash, was originally fed by the Tyburn, but there seems to be no real evidence even for this.

The facts are as follows: the earliest mention we have of Westminster is Offa's Charter (Latin, *c*.785), which speaks of 'St Peter and the people of the Lord dwelling in Thornea at the awesome place called Westminster'. It is now agreed that *'in loco terribili'* implies that it was awe-inspiring (because of its religious connections) rather than desolate, and Thorn-ea is accepted as meaning Thorn Island, or, as Besant puts it, the Isle of Bramble. The few islands still existing in the Thames, themselves fast disappearing, not only preserve the ancient ending '-ea' (as 'eyot'), but give some idea of what Thorney must have looked like: a low flat sandbank, covered with brambles (Ill. 14). According to Bardwell, Thorney Island was 470 by 370 yards in size, and this is supported by the geological evidence that along Great Smith Street the clay dips steeply down and disappears, suggesting that this was a backwater in early times: this finding has been confirmed in recent building operations on this site. Another piece of evidence is the observation of the late Mr J.D. Carleton[7] that in the

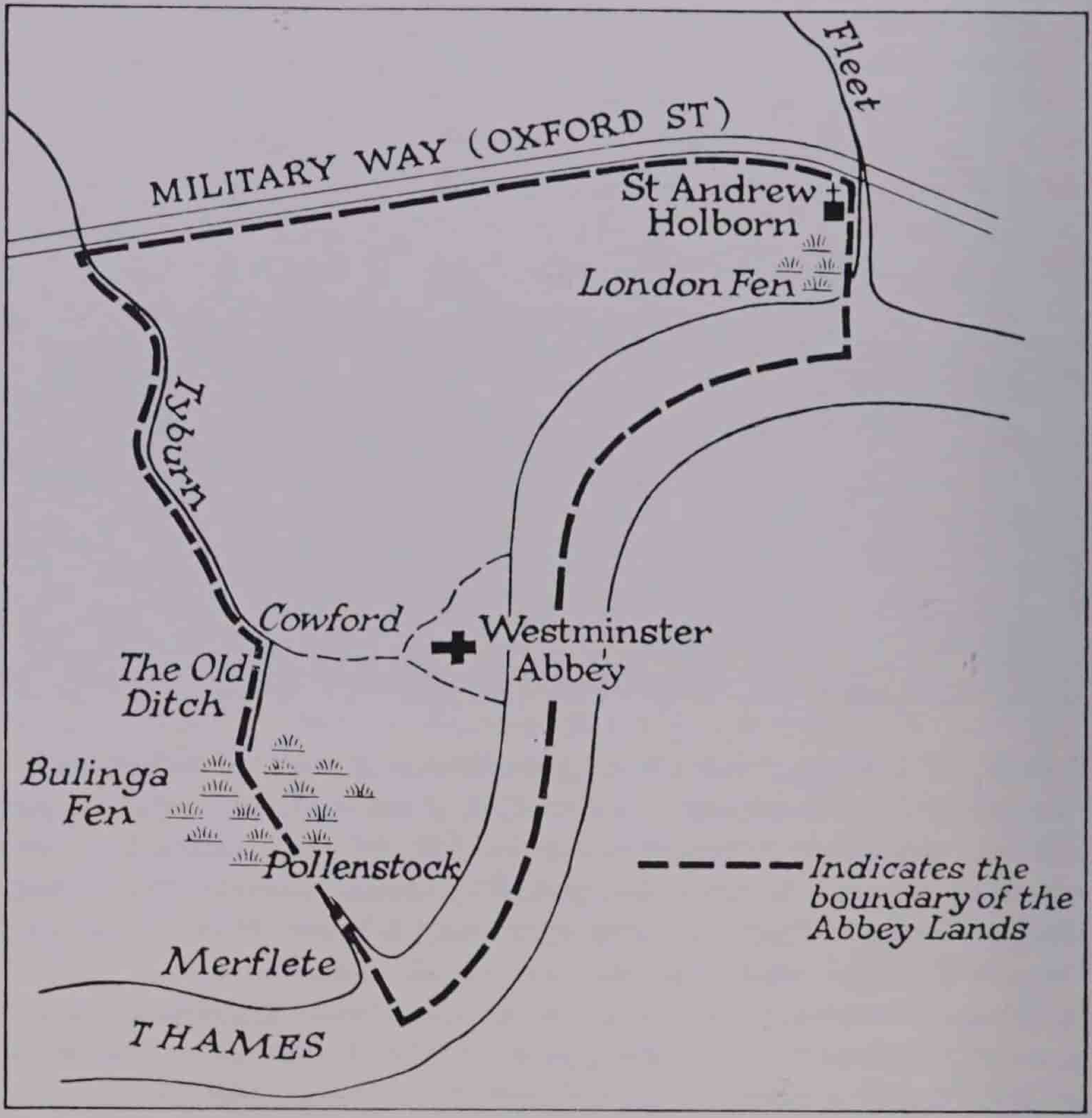


14. Chiswick Eyot from Chiswick Mall.

floods of 1928 the waters advancing along Tufton Street from Horseferry Road were stopped about 100 yards south of Great College Street by a barely perceptible rise in the ground, and Thorney was an island once again. We may also note that a bridge was found in Great College Street during the construction of Church House. All this favours the belief that Thornea was a small island.

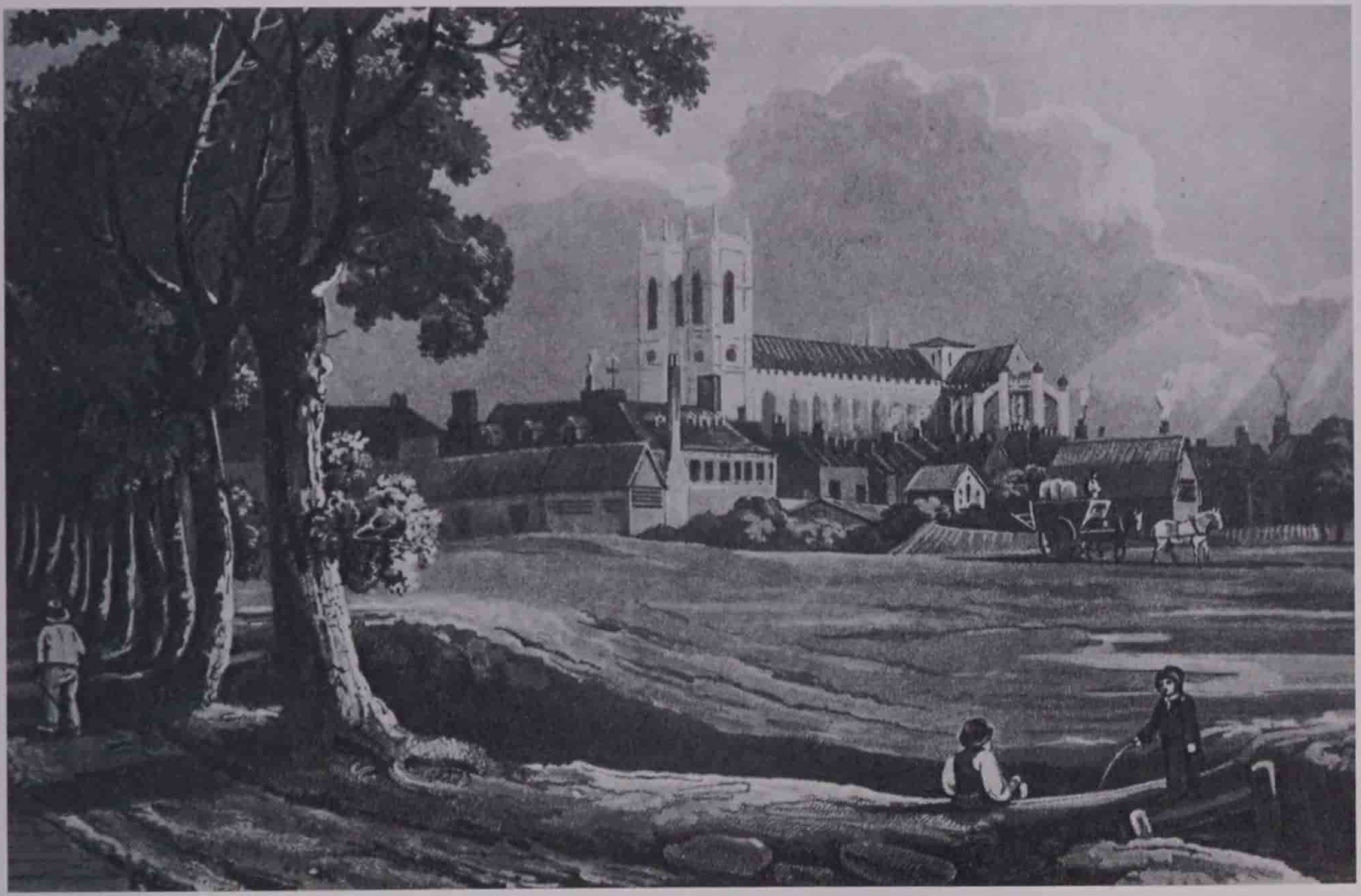
The next reference is Edgar's Charter (Anglo-Saxon, 951), to which is attached a description of the boundaries of Westminster. This is so important that it must be quoted in full: 'First up from the Thames along Merflete to Pollenstock, so to Bulinga Fen, along the old ditch to Cowford. From Cowford up along Tyburn to the Broad Military Way; following the Military Way to the stock of St Andrew's Church, then within London Fen, proceeding south on Thames to midstream, and along the stream by land and strand to Merflete.'

Although the details are very complicated[8] the locations of the places named seem to be more or less agreed (see Map 5): Merflete was probably a tidal inlet near Vauxhall Bridge,[9] with Pollenstock[10] and Bulinga Fen north of it, the latter perhaps drained by 'the old ditch' which seems to have joined the Tyburn at Cowford. (This must have been across the Tyburn. There was later a Cowbridge, which has been said to be at Piccadilly, but if the bridge there was Kingsbridge, then Cowbridge may be supposed to have been farther south, which is where the Cowford would seem to be in this document. This would put it somewhere around Buckingham Palace.) We may conclude that there was not at this time a *continuous* watercourse down the line of Vauxhall Bridge Road, or it would surely have been used as the boundary. The fact that the Tyburn is not mentioned until Bucking-


Fleet
MILITARY WAY (OXFORD ST)
St Andrew Holborn
London Fen
Tyburn
Cowford
Westminster Abbey
The Old Ditch
Bulinga Fen
Pollenstock
Merflete
THAMES
Indicates the boundary of the Abbey Lands

MAP 5. *Sketch map to illustrate probable interpretation of Edgar's Charter.*

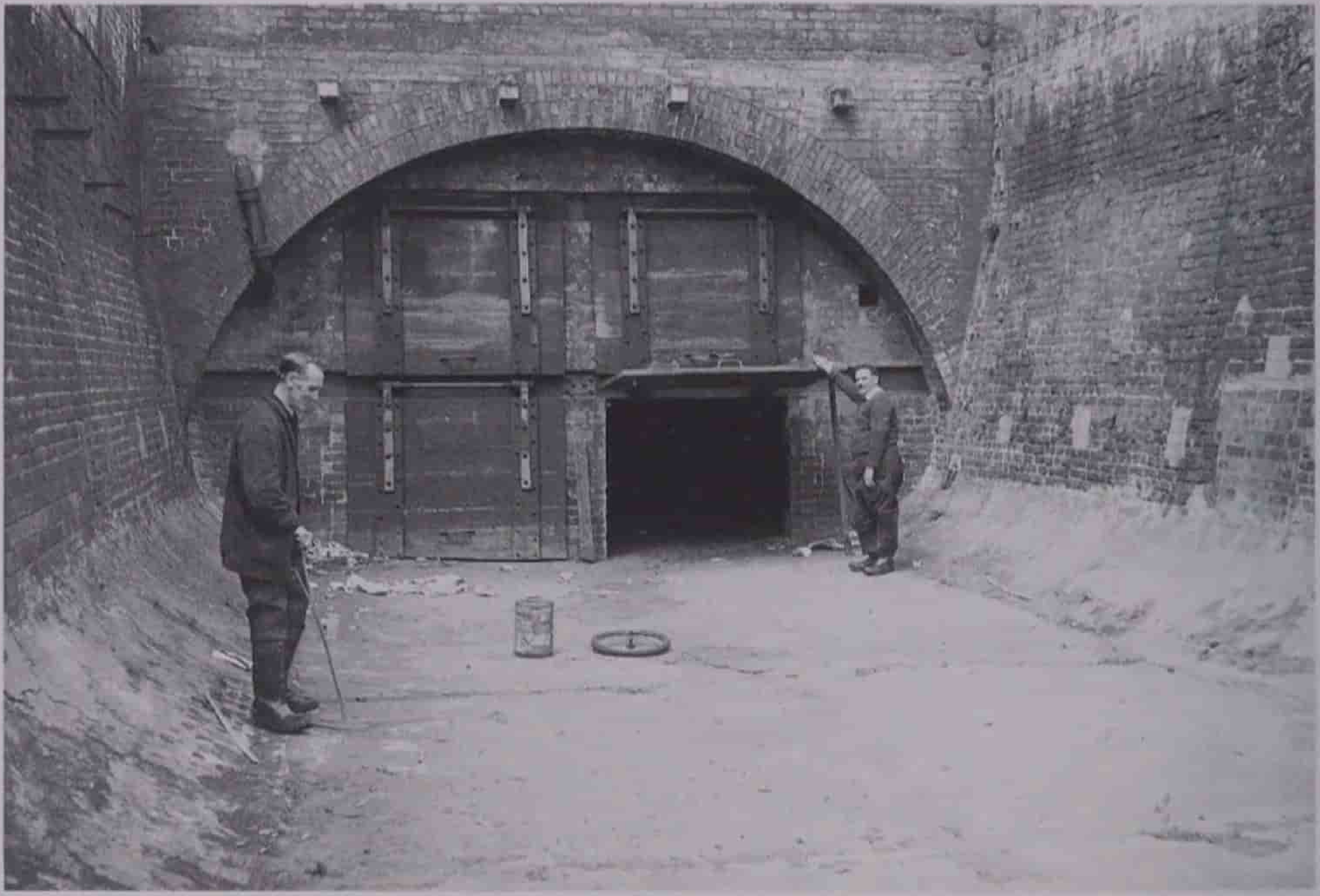
ham Palace is reached also suggests that it did not flow down through Bulinga Fen.[11] A further point is that if the Tyburn joined the Thames near Vauxhall Bridge, it would be doing so on the inner side of one of the Thames's curves, which (for reasons explained on page 13) is unlikely. Apart from this, the topography of the area is very little help, since it is uniformly flat. There used to be a rise in the ground at Tothill (near Vincent Square) but a petition of 1658 speaks of it as being 'made of many thousands of loads' of earth, so it may have been artificial. It is certain that the whole area was marshy and intersected by many watercourses: this is apparent from Edgar's Charter, from the earliest maps of the area,[12] and from Ill. 15, which shows that these conditions persisted into remarkably recent times. Several of the early maps show a stream entering Westminster from the west, and traces of this have been found north of Abbey Orchard Street, in the building operations referred to above (page 36). Norden shows the Abbey still on a small island, surrounded by ditches, and Hoefnagel indicates a large stream running along Horseferry Road. This



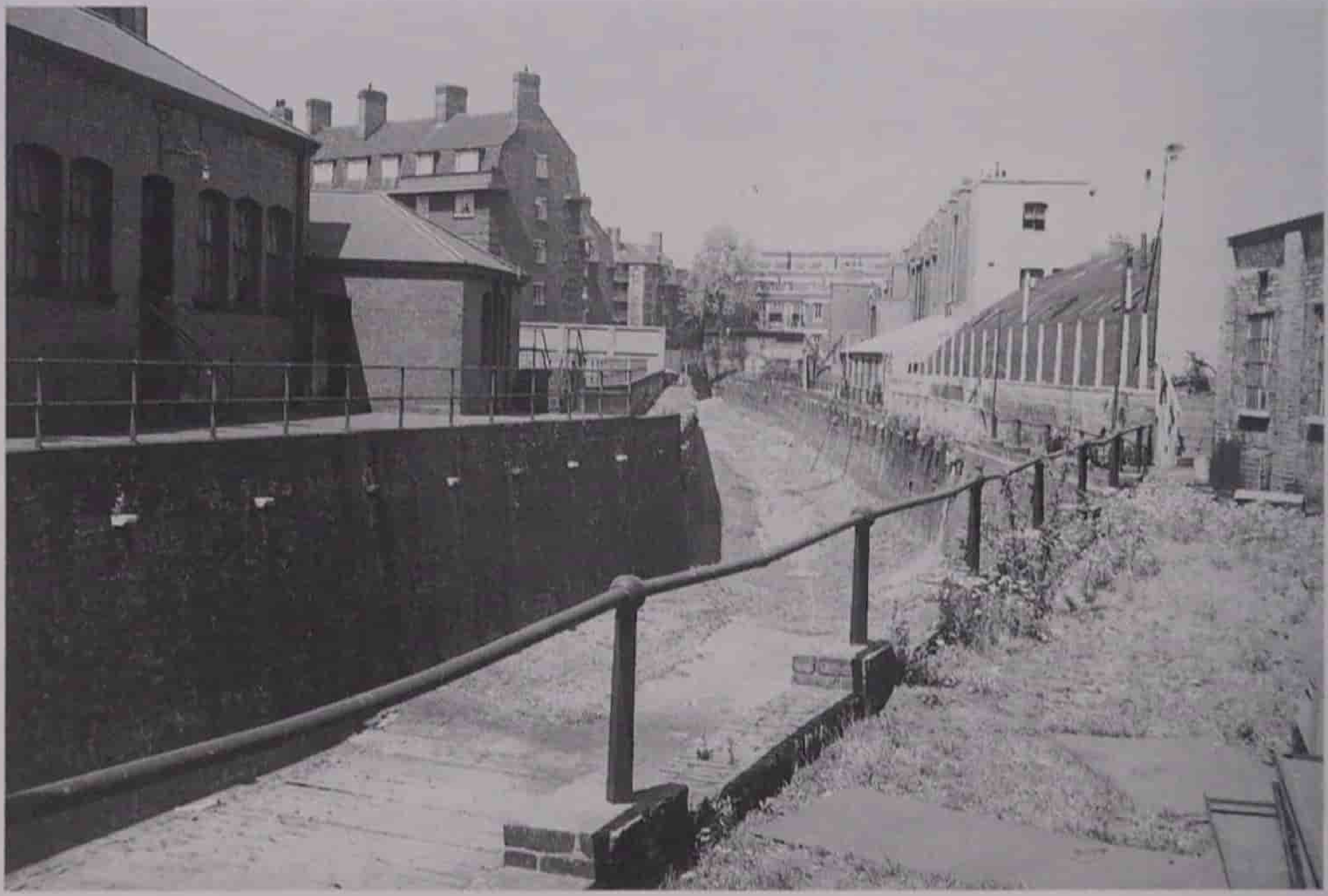
15. *Tothill Fields in 1807; Westminster ended abruptly on the borders of the marsh land. Note the pool of stagnant water behind the boy on the right and the deep drainage ditch over which he is standing; also the plank cartway on the extreme left. The horse and cart on the right are proceeding along the Horseferry Road to the Thames. The viewpoint is approximately from the centre of modern Rochester Row, looking towards the Greycoat School and the backs of the houses in Great Peter Street.*

may have been deliberately enlarged to act as a reservoir of water for the Abbey Mill (see page 99).

By the late seventeenth century, the period studied by Wood, not only is there no definite evidence of a stream from Buckingham Palace to Westminster, but there is a plan of Ebury Manor (1663–70) which unequivocally shows the Tyburn continuing south from Buckingham Palace, past Victoria, and down the line of Tachbrook Street. This watercourse may conveniently be termed the Tachbrook, though contemporary documents call it the Kingschoole Sluice and refer to its use as a sewer.[13] The name derives from the King's Scholars' Pond in Tothill fields, which in turn took its name from the King's Scholars of Westminster School, who presumably used to fish, swim or play in or near it. The sewer in which the Tyburn now flows is called the King's Scholars' Pond Sewer throughout its length, and follows the same course as on the plan of Ebury Manor. Harris's map (1790) shows it still open from Victoria to the Thames, but it was gradually covered over, and I am indebted to Mr J.D. Carleton for the following recollection of what must have been among its last public appearances. When he first went as a boy to Westminster, he was boarded out for a time in a house known as Thring's, at the corner of Lupus Street and Pulford Street.'An imposing gateway, surmounted by a clock, led into



16. *Arch at the end of the dried up bed of the Tachbrook, which leads to King's Scholars' Pond Sewer and onwards passing under Buckingham Palace.*



17. *Dried up bed of the Tachbrook near Vauxhall Bridge.*

what had been the stable yard, and beyond this again was a large open space, perhaps an acre in extent, bordered by one of London's forgotten rivers, the Tachbrook, now degraded to a storm sewer. This place was covered with asphalt, and would have made a good playground but for the fact that its whole surface was studded with short iron spikes so close together that it was impossible to walk with comfort. It was as if the whole area had been prepared for a mass meeting of fakirs.' At the far end was a large trench some 20 feet wide and 15 feet deep: to the north it disappeared under Lupus Street and was closed by iron swing-doors, while to the south it passed under a high wall into the King's Scholars' Pond Pumping Station (now replaced by flats). Normally the trench was dry, but one night during the summer of 1924 there was a terrific storm, and looking out of the dormitory window, he saw, lit up by the flashes of lightning, the surging stormwaters three-quarters filling the trench as they poured down to the Thames.

Eric Newby, in his autobiography, describes a visit to the King's Scholars' Pond Sewer with a Mr B. who came from a family of sewermen. 'His father had spent thirty-eight years underground, while he himself had been at it for fifteen. He and his family lived in a charming Victorian cottage which overlooked the Thames opposite the Grosvenor Road depot, and the Tyburn ran right under it. The bottom of the Tyburn was littered with some bizarre sorts of jetsam which included that morning a fine pair of unmounted antlers, a folio bible in the Welsh language, half a pram and an old bicycle – could they be from the Palace?

'We entered the covered-in part. The water was not more than a foot deep, but the atmosphere was steamy.'' The steamiest of the lot is Piccadilly'', Mr B. said, ''on account of the hotels and baths and washing-up going on all day and night.''

''What about the Palace?'' I asked.''Anything special about that?''

''Well, you can take it from me'', said Mr B., ''that what comes down hasn't got 'By Appointment' on it.'''

It would seem, from the Ebury Manor plan that the course of the Tyburn was altered between 951 and 1663. My own belief is that after the conduit was built to carry off water from the Tyburn to the City in 1236, there was little of the stream left, except in times of storm. Certainly the impounding of other springs near by in 1355 and springs farther away in Paddington in 1439[14] suggests that there was no more water to be obtained from the Tyburn. In the same way, the Wandle in Croydon is known to have been greatly diminished by removing water from it for domestic purposes. This would at least explain why £400 should have been spent in 1612 to make a 'vault of brick arched over' from Hyde Park to Rosamund's Pond in St James's Park.[15] It remains of course quite mysterious why the Abbey should have gone to Hyde

Park for its water supply even before this: I can only suggest that the Tyburn debouched in St James's Park into a stagnant swamp which was found by experience to be unhealthy for drinking purposes. It was probably during the drainage of St James's Park by Henry VIII, or perhaps early in the wave of sewer-building in the mid seventeenth century, that the Merflete and the 'old ditch' were connected with the Tyburn, and the Tachbrook created: probably this was before 1634–5, when a bridge over the sewer in Tothill fields was repaired.

The reference in Edgar's Charter is the first appearance of the name Tyburn: it is rendered as *'Teo-burna'*. Waller takes this as meaning two-burn, referring to the bifurcation of the stream, but Ekwall (1928) derives it from an old Frisian word not elsewhere found in English, which gives it the meaning of 'boundary-stream'. That it did serve this function is, of course, evident from the context in which it is first mentioned.

NOTES

1. Again the best authority is Waller (1890). It appears from a footnote in Loftie that Waller personally observed the upper parts of the streams he described.
2. Miss H.A. Wood
3. Prideaux (1906) has cleared up the confusion between this and Knightsbridge.
4. According to Ormsby this water-supply dates from Edward the Confessor, the charter being renewed in 1536. Mr L.E. Tanner, Keeper of the Muniments of Westminster Abbey, who gave me much help, was not able to confirm this, but it was certainly being spoken of as 'St Edward's watercourse' about 1260. Some of the wooden pipes may be seen in the Undercroft at the Abbey.
5. This was in the south-west corner of the park (see Norman) and was the one 'long consecrated to disastrous love and elegiac poetry'. After it was filled in (*c.* 1770) the name seems to have been transferred to a rectangular pool in the old bed of the Tyburn in Green Park: this, at least, was fed by the Tyburn, and existed till 1842.
6. This was east of the second Rosamund's Pond (see previous footnote). There are paintings in the Crace collection which show both in one view. (Port. 10, sheet 27, No. 66, and Sheet 28, No. 67.)
7. Headmaster of Westminster School. Not only did he give me the benefit of his immense personal knowledge of Westminster, but he encouraged and helped me throughout this study.
8. They are discussed by Waller (whose translation I have used) and many others, e.g. Saunders.
9. The meaning of -flete has been discussed above: Waller takes Mer- to be related to the Saxon 'Gemaere', a boundary.
10. Which may signify a row of polled trees, possibly willows (E. Saxon).
11. This observation I owe to Waller.
12. Such as that of Norden, which maddeningly ends in the middle of St James's Park.
13. e.g. Minutes of Westminster Commissioners of Sewers, IV (1672), p. 296. (See also p. 63 of the present work.)
14. Morley Davies.
15. Norman.

Chapter Four

THE RIVERS OF THE WEST

1. The Westbourne

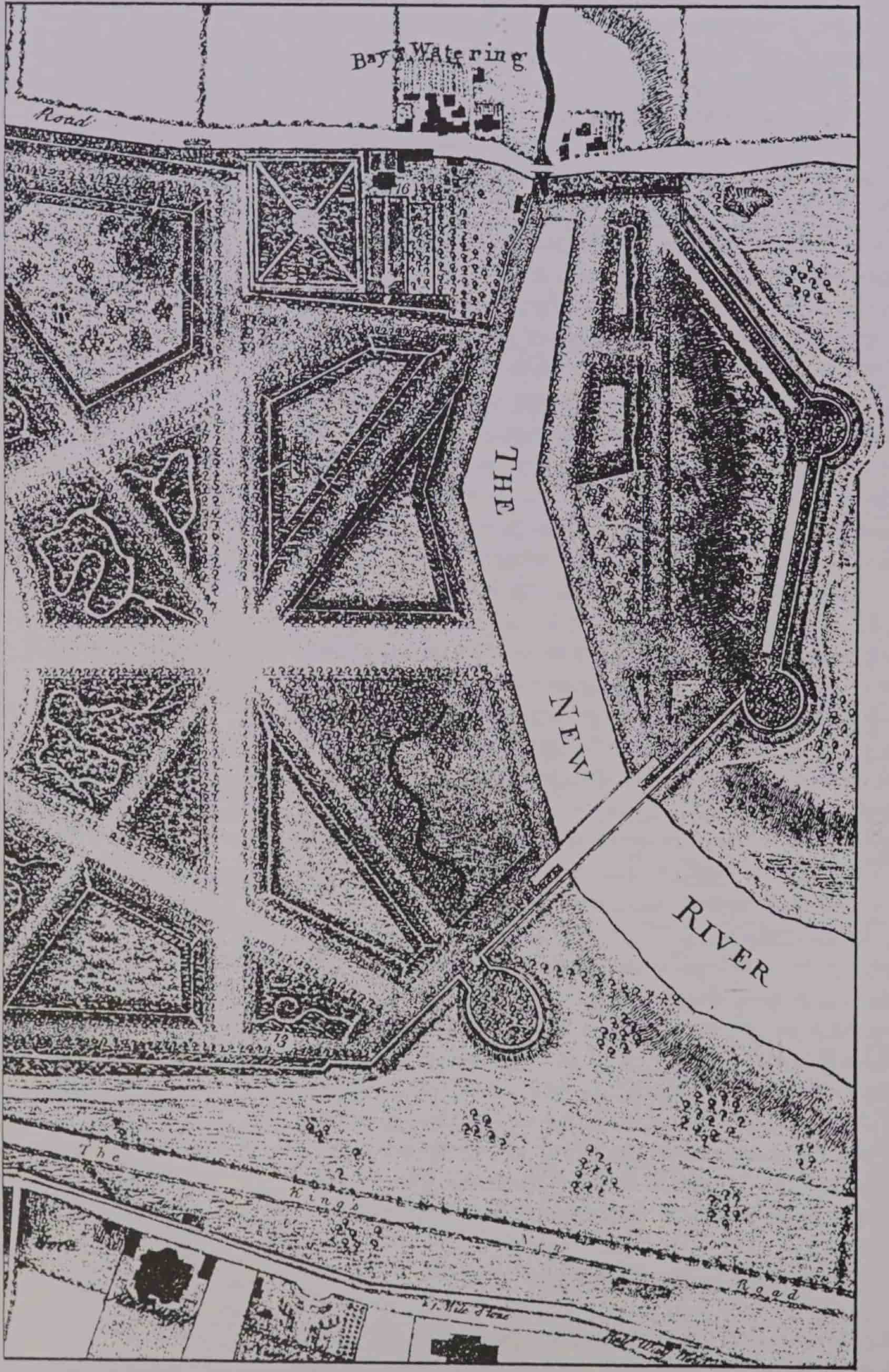
THE WESTBOURNE was a larger stream than the Tyburn, more like the Fleet in size. It arose [1] by several streamlets from the west side of Hampstead, one of which can be seen flowing beneath a manhole at the west end of Alexandra Road. These united near Kilburn, where there was a fish-pond, and, as early as the thirteenth century, a bridge under Watling Street. A little farther south the stream was joined by another tributary, then continued south-south-west across the Bayswater Road (Ill. 21), and into Hyde Park, where its valley is occupied by the Serpentine. There was a further small tributary here, running southwards from near Marble Arch, and confusingly known as the Tyburn Brook, presumably from its proximity to the gallows.

In the southern part of the Park, the Westbourne formed two ponds, and then passed out under Knightsbridge[2] (Ill. 20). From here its course was roughly southwards, though with many meanders, until it fell into the Thames in the grounds of Chelsea Hospital. Just above the mouth, part of the stream was diverted to the adjacent reservoir of the Chelsea Waterworks, and this is why it is shown on some maps with a double mouth.

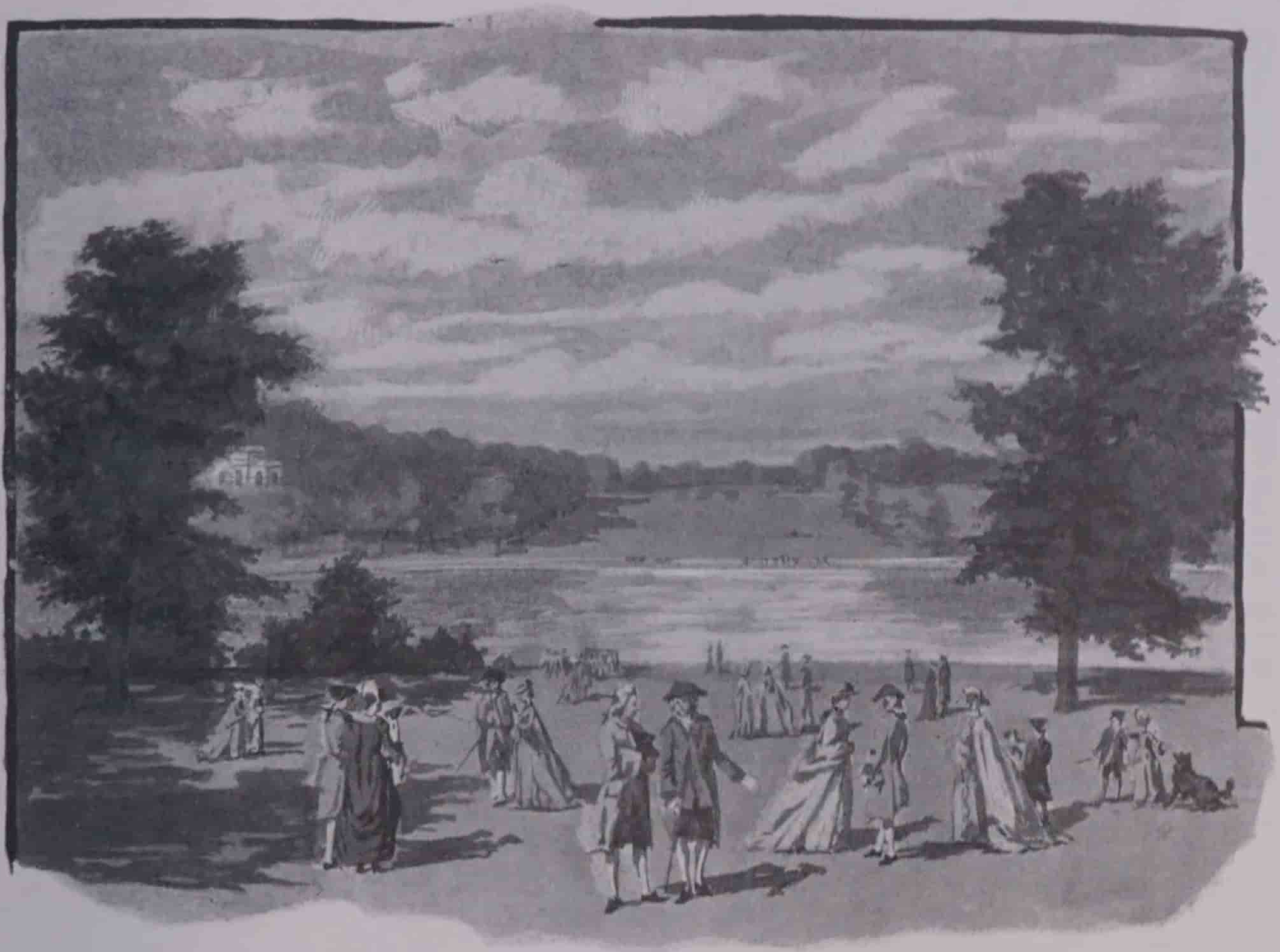
The stream remained open till quite late, and was not completely covered in till 1856–7. It is now the Ranelagh Sewer, and the outfall into the Thames can be seen at low tide. The name Westbourne does not appear till the nineteenth century, and is probably a late back-formation from Westbourne in Paddington, the name of the place 'west of the stream' and not originally the name of the stream itself.[3] The name Kilburn, which was probably applied to the upper part of the stream, originally had no 'L' and is derived from the Old English *'cyne-burna'* (royal stream) or possibly *'cyna-burna'* (cow's stream).[4]

2. Counter's Creek

This stream,[5] which was also known as Billingwell Ditch,[6] arose near Kensal Green cemetery and pursued a roughly straight course south-south-east. Passing close to the present sites of three great

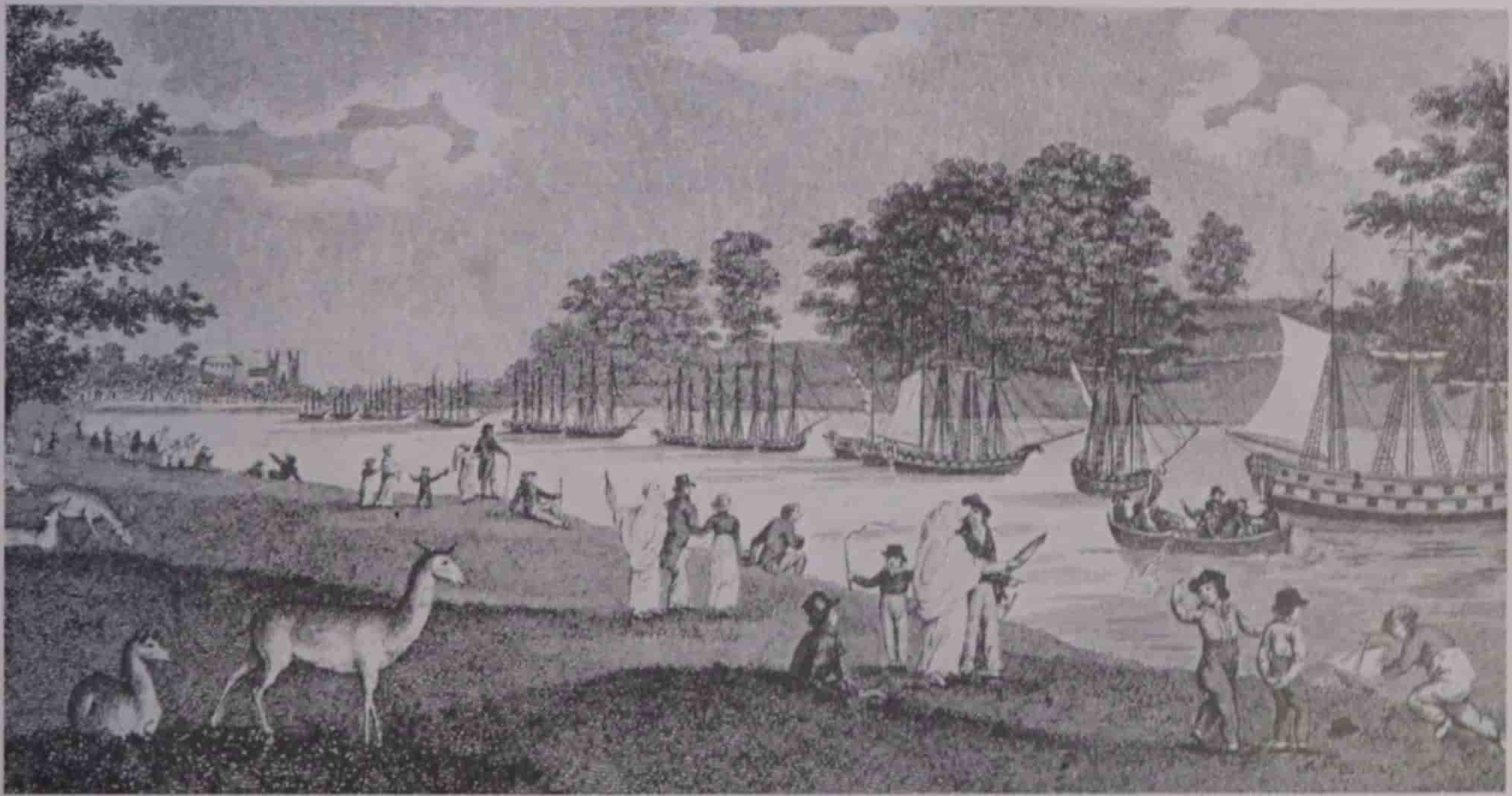

Bays Watering
Road
16
THE
NEW
RIVER
13
The
Kings
Road
1 Mile Stone

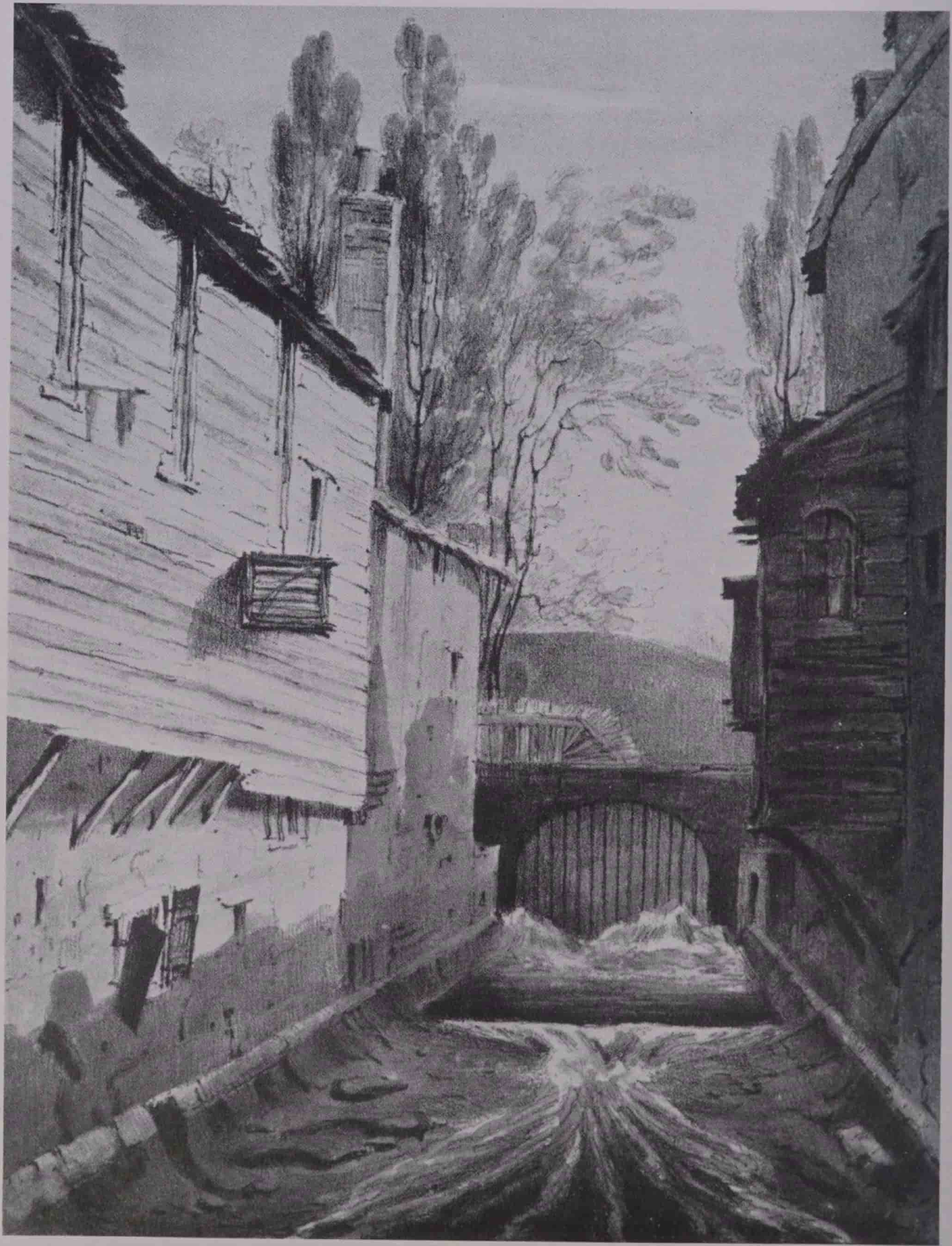
MAP 6. *At the top of the map the Westbourne reaches Bayswater and is then used to form the Serpentine. From a map compiled by John Rocque in 1754.*



18. *A perspective of the Serpentine, 1744.*

19. *Preparing for a Mock Trafalgar on the Serpentine, a print of 1814.*





20.*'Outfall of the Serpentine at Knight's Bridge', a painting by G.F. Philips, early 19th century.*

auditoria: the old White City (opposite which it received a small tributary from the Ladbroke Grove area), Olympia, and Earl's Court. The Fulham Road crossed it at a sandy ford, which was later superseded by the bridge carrying the King's Road. Here it received a small tributary from the west, and continued to the Thames as Chelsea Creek, still visible as 'a stagnant ditch with a few disheartened marguerite daisies and thistles growing beside the green slime.'[7]

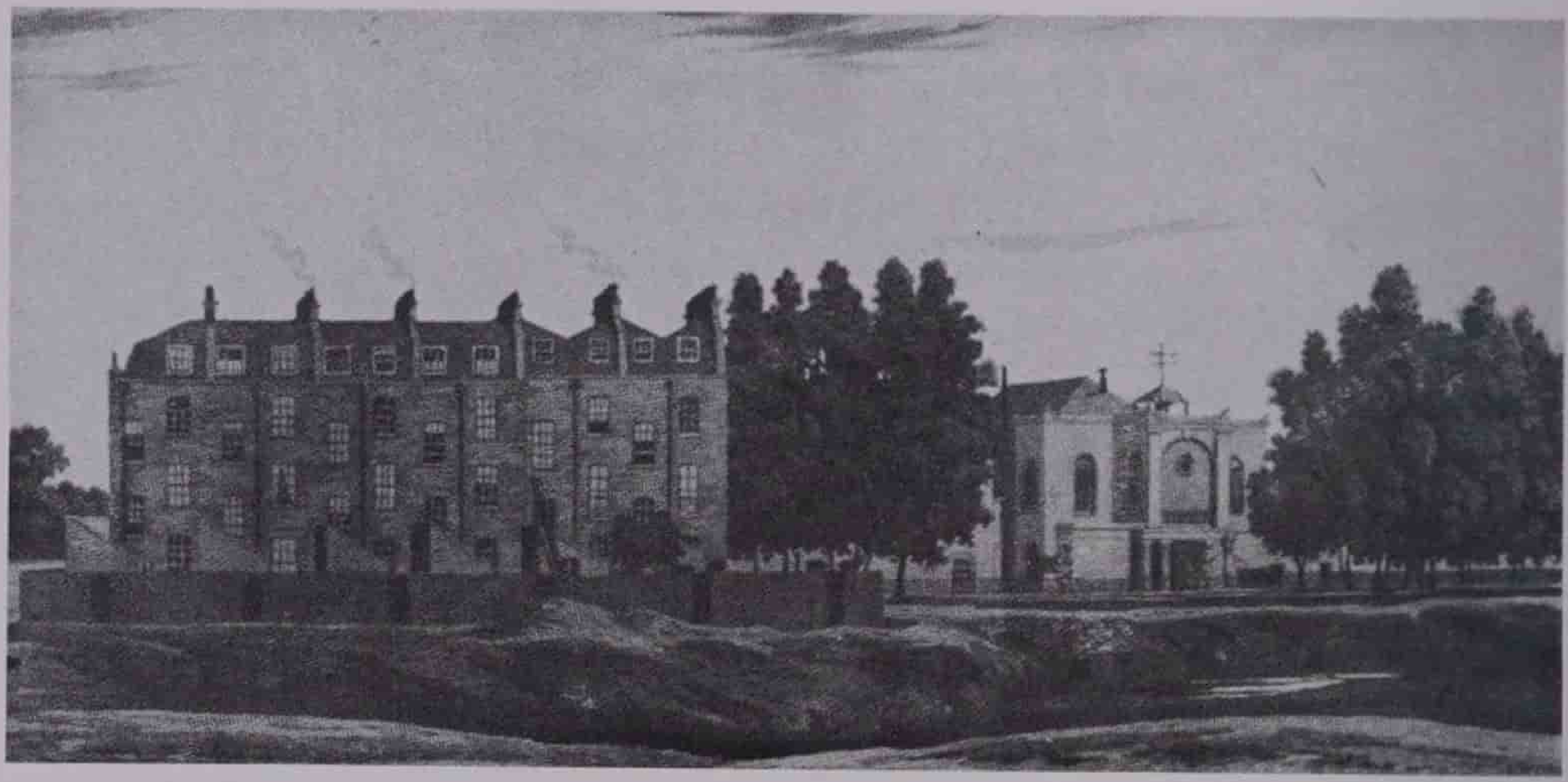
The name is an extension of the term 'Counters Bridge' (for the bridge at Olympia) which first appears in 1421 as Contessebregge: it is supposed that the bridge was first built by some great lady who lived in the area,[8] possibly the Countess of Oxford who owned Earl's Court. The lowest part of the stream was also called Bull Creek, from Bull Alley, which ran parallel.

3. Stamford Brook

This name is applied to the streams emptying into the Thames at Hammersmith, but the presence of a number of artificial watercourses in the area has rather complicated the picture. The street-map shows what seem to be the main streams.

The easternmost streams[9] arose on the west of Wormwood Scrubs, near the Old Acton Wells, and flowed south down Old Oak Common Lane and Old Oak Road. In 1899 anyone making his way up these roads to the site of the Wells had to 'run the gauntlet (to one's nose) of the disgraceful open sewer, which was once a purling crystal brooklet, that skirts the way'[10] A second stream, known locally as the Warple, ran down the west side of Horn Lane, and then turned eastward to flow down to Ravenscourt Park, which was formerly surrounded by a moat, doubtless fed by the stream.[11] The third and most westerly stream came down from West Acton, crossed under Bollo Bridge (earlier known as Bull Hollow bridge), followed the curving line of Bollo Lane, and finally ran eastward through Turnham Green to join the other streams. In 1826 it was called Boller Brook.[12]

From the old maps and from the first-hand description of the Rt Hon. Sir William Bull, M.P., it seems clear that the two westerly streams united, flowed east across Goldhawk Road and Ravenscourt Park (supplying the lake), and then, joining the eastern stream, turned south and reached the Thames at Hammersmith Creek, of which only a few yards remain. Some doubt has arisen because the Geological Survey does not mark this outfall, and instead shows a stream joining the Thames farther west, near Chiswick Eyot. However, many of the old maps testify to the eastern termination, while the western one is shown only by Wyld (and even on this it is doubtful if a watercourse is intended) and Salter (1830) who marks the upper 100 yards or so only. Possibly this was a ditch dug to mark the western



21. Bayswater Chapel and the River Westbourne

boundary of the parish of Hammersmith (cf. Parr's ditch, p. 67).

The Stamford Brook probably takes its name from a stony ford ('Stanford') at the Great West Road. It remained open until late in the last century, but has now been 'abominably diverted, covered in, and sewerized'.[13]

NOTES

1. Again the best account is that of Waller, but there are many maps to confirm it.
2. There has been some confusion arising from a statement of Norden in 1593 that this was a corruption of Kingsbridge. This is not only improbable but untrue, as is shown clearly by Prideaux in an article on Salway's Plan of the Kensington Turnpike, *London Topographical Record*, vol. iii (1906), p. 61.
3. Prideaux, *Notes and Queries*, 9th series, vol. viii, p. 517. For the ensuing discussion see ix: 51, 92, 190, 269, 291, 375, 476 and x: 16.
4. Gover *et al.*, 1942.
5. Nowhere described in writing but shown in several maps, of which the most helpful are those of Rocque, Faulkner and Roberts. The Ladbroke Grove tributary is shown by Greenwood and the King's Road tributary by Veitch.
6. This refers to a medicinal spring at Earl's Court called Billing's Well (Foord).
7. Bolitho and Peel.
8. Prideaux (1906), Cf. Bow Bridge across the Lea, which was built by Queen Matilda.
9. Shown best in the maps of Roberts and Wyld.
10. Kemp's *West London Sketcher and the Leeve*, 1 March 1889.
11. *Notes and Queries*, 6th series, vol. v, pp. 208, 291.
12. The second and third streams are shown by Rocque and Greenwood: also in the Geological Survey maps.
13. Kemp's *West London Sketcher and the Leeve*, 1 March 1889.

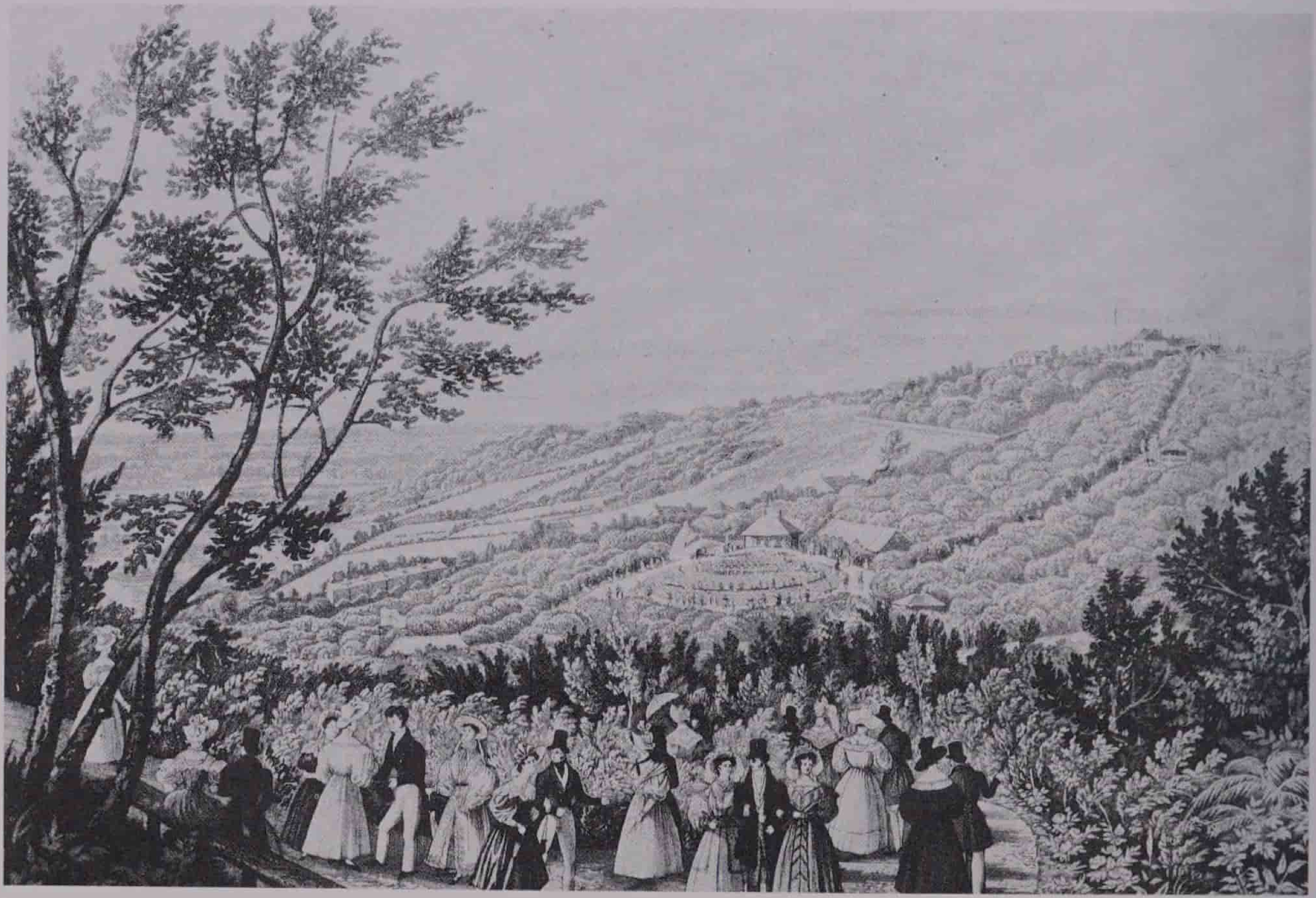
Chapter Five

THE RIVERS OF THE SOUTH

THE LOST RIVERS of South London are less interesting, less historically important and much less well documented than those of the north. This is largely due to the marshy conditions which for long prevailed over much of the area: a good impression of this is gained from Agas's map, which shows a high bank along the south side of the Thames, pierced at intervals to allow egress of drainage ditches. Much of the area is still below high-tide level, and even a few hundred years ago consisted of little more than marshy saltings, through which flowed a changing pattern of tidal creeks. It is significant that both the Roman boats which have been found in this country had been drawn up in backwaters of the Thames in this region: one on the site of the former County Hall and the other at Guy's Hospital.

However, we must pause to refute the theory of Besant and Loftie that earlier still the Thames in the London area spread out into a vast shallow tidal lagoon, covering almost the whole alluvial plain. They expressed their views with such conviction that they are still widely believed, although they were challenged as early as 1885,[1] and repeatedly since then. The theory rests chiefly on a reference in Dio Cassius (155–235) to the British retreating before Aulus Platius 'at a point near where it [the Thames] empties into the ocean and at flood-tide forms a lake'. The objections to believing this lake to have been near London are as follows:

(i) It is now known that the level of the Thames today is some 15 feet higher, relative to the land, than in Roman times, since Roman huts have been found at Tilbury 13 feet below the present high-water mark. Fitter concludes 'so all the formerly marshy ground of South London, some of which is actually below sea-level today, was in Roman times well above the reach of any but the highest tides'. This is due in part to a general tilting of the land-mass of England, so that the south-east corner has been lowered and the north-west corner raised, and in part to the confining of the Thames in a narrower channel than before by river-walls. The building of further river-walls is now discouraged by the Port of London Authority because of strain upon the piers of bridges which would be imposed by a further raising of the water-level.



22. People enjoying the amenities of Beulah Spa in the early 19th century, overlooking the source of the River Effra.

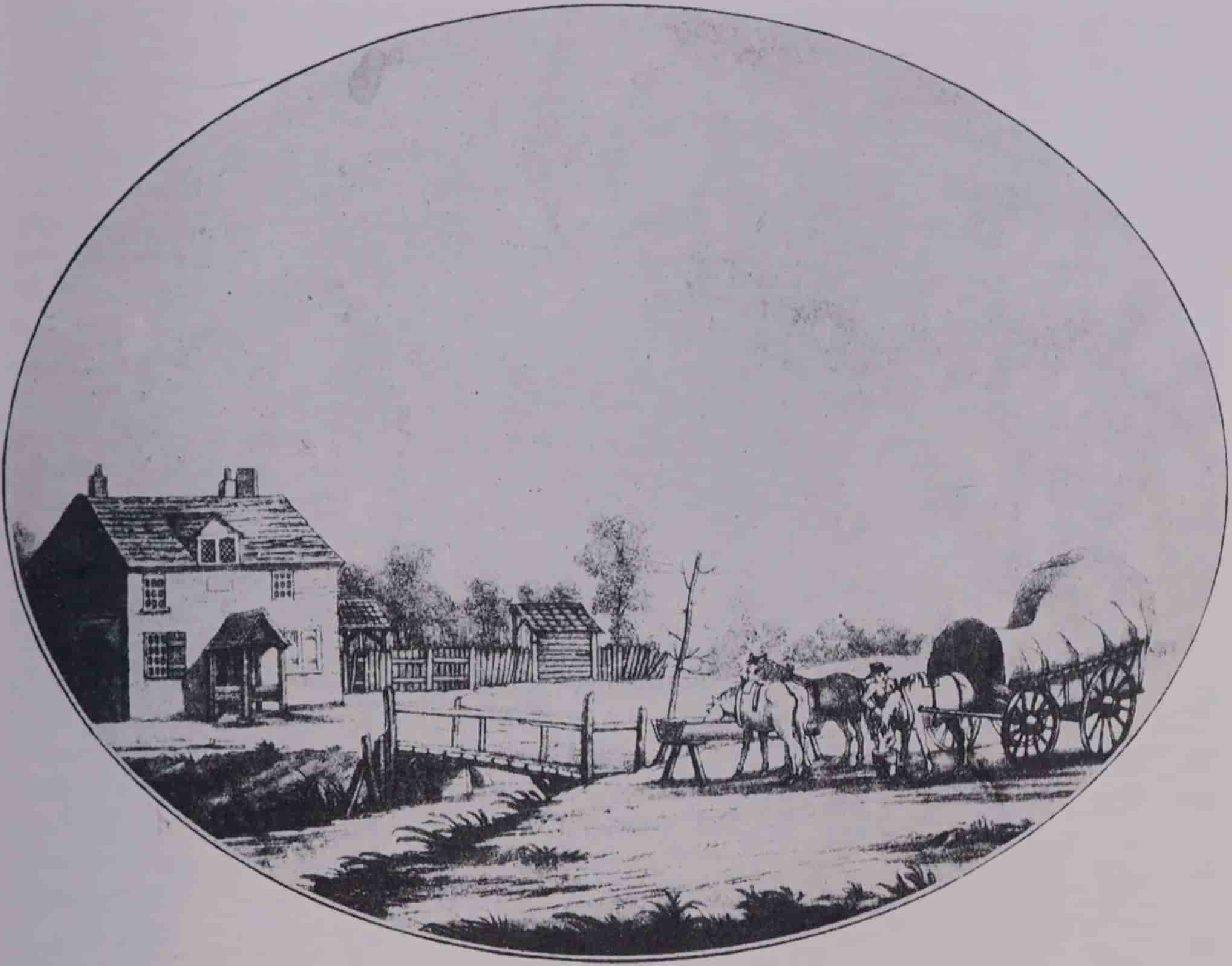
(ii) There is reason to believe that in the Roman period the Thames was not tidal as far up as London: for instance, there was a yew-forest at this period on the marshes below Dagenham, but yew dislikes water and saline conditions.

(iii) There is no trace of historical or archaeological evidence of the construction of embankments in this period.

1. The Falcon Brook[2]

This was quite a large stream arising by two heads in Balham and Tooting, which united near Clapham Common and ran north-north-west to Clapham Junction station, where it turned west. A small creek still shows where it joined the Thames at Battersea.

The original name was 'Hidaburna'. The name Falcon was probably adopted 'in honour of the 17th-century Lords of Battersea Manor, the St Johns, whose crest was 'a Falcon rising"'. There was in the late eighteenth century 'a tavern yclept the Falcon, kept by one Robert Death – whose figure is said to have ill comported with his name, seeing that it displayed the highest appearance of jollity and good condition'.[3] It is likely that the Falcon was 'first adopted as an inn sign



23. *The Effra at Martin's Farm, corner of Loughborough Road in 1784.*

and then transferred to the brook which flowed at its door'.[4] This sort of origin for stream-names is not uncommon: compare the nearby Graveney, a partly buried tributary of the Wandle flowing through Tooting, which takes its name from the Gravenal family of the twelfth and thirteenth centuries.[5]

2. The River Effra

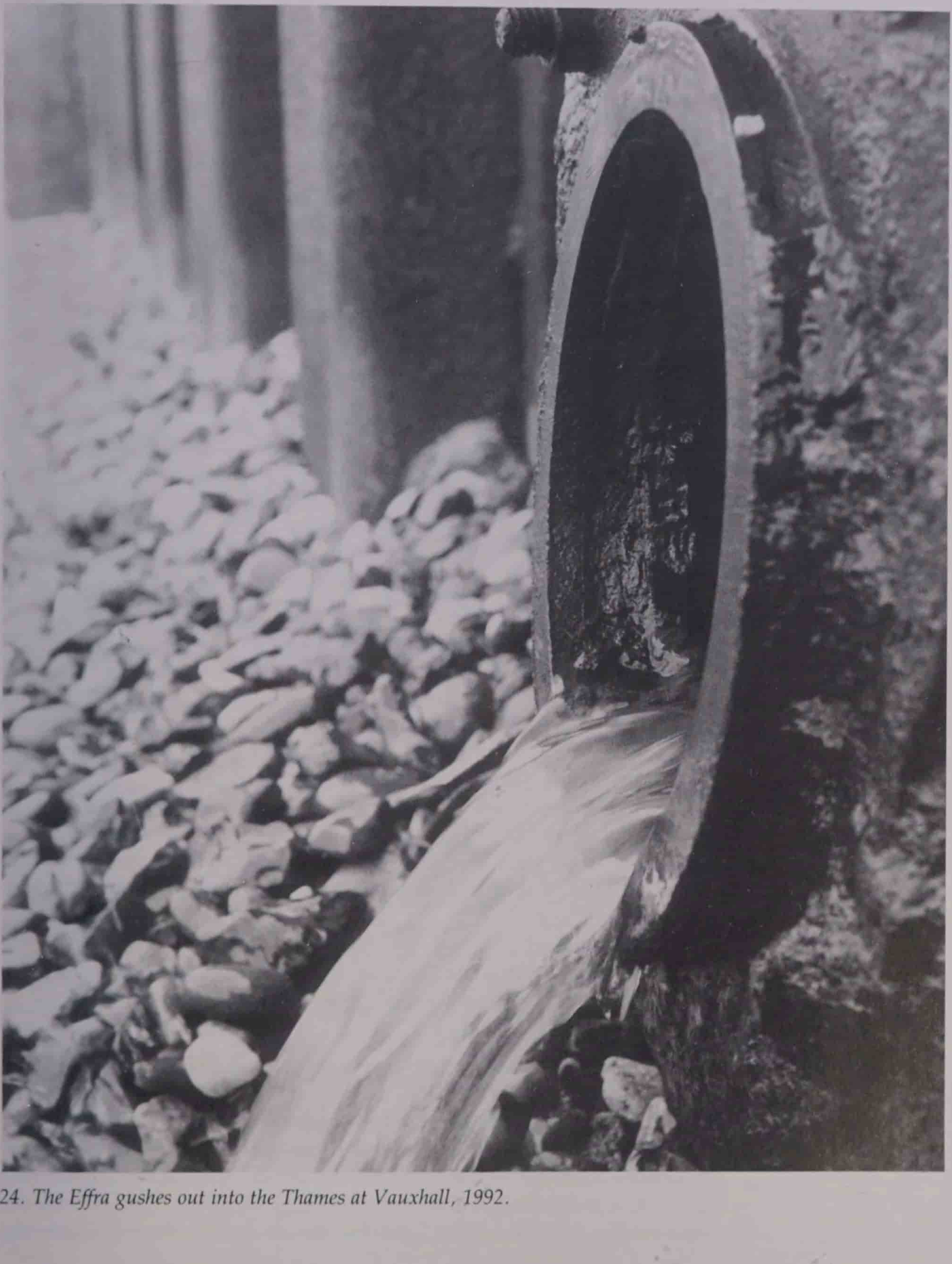
This was one of the larger rivers, its size being comparable to that of the Fleet or the Westbourne. There is some disagreement in the various descriptions of the upper part of its course. Foord[6] and Besant (1899)[7] describe it as arising in the hills of Norwood and bearing east to run down into the valley marked by Croxted Road, but Brayley says it began 'in the upper part of the Brixton district', and this is also the impression gained from Rocque's map, in which it arises at Island Green (near Knight's Hill). Faden's map (1800) makes matters worse by showing a stream passing through Norwood Cemetery but then flowing west to become one of the origins of the Falcon Brook.

The truth seems to be that both of the first two interpretations were right: the main stream arose in Norwood, passed though the cemetery, and flowed down beside Croxted Road, being joined at the Half Moon in Dulwich by a large tributary coming down from between Streatham Hill and Knight's Hill.[8] As for Faden, a study of a contour map or an examination of the ground itself in this area reveals that the course he proposes involves the stream in going quite steeply uphill: in fact, the railway following roughly the same route as the suggested westbound stream has to pass through a tunnel between West Norwood and Streatham Hill stations.

Below Croxted Road the course of the stream is clear. Crossing under the main road[9] near Herne Hill station, it ran along the north-east side of the park of Brockwell House, receiving at the northern end of the park another tributary which was presumably that described by a lady living at 32 Tulse Hill in 1891 as formerly flowing at the bottom of her garden: she added that the banks could still be traced in Leander Road.[10]

Meandering across Rush Common, it reached Brixton, where it was 12 feet wide and 6 feet deep. It then flowed down the east side of the Brixton Road, under little bridges giving access to the houses, to Kennington church, where it turned westwards into a marshy area. The Brixton Road crossed it by Hazard's Bridge,[11] and the Clapham Road by Merton Bridge, so called because its repair was the responsibility of the Canons of Merton Abbey.[12] The Effra ran along the south side of the Oval, received a small tributary from the north arising in Mawbey's pond on Kennington Green, and then passed close to the old Vauxhall pleasure-gardens. Finally, it passed under South Lambeth Road at Cox's Bridge before falling into the Thames just upstream of Vauxhall Bridge.[13] In 1340 the Abbot of Westminster was charged with the repair of 'cokkesbrugge' and in 1504 one of his successors was paying rent for a wharf there, but by the seventeenth century the maintenance of the bridge was giving rise to a dispute, for by reason of the 'enundacion and outrage of waters' it had become 'prostrate and throwne down' and the fallen stones were hindering the flow of water.[14]

The lower Effra was being used as a sewer by the seventeenth century: it is so labelled on the plan of 1636, and also on that of 1785, which shows it with a double mouth, the second branch being slightly farther to the south-west. In 1640 Robert Addison, butcher, was found responsible by the Surrey and Kent Commissioners of Sewers for scouring the sewer which lay along his ground at Hazard's Bridge. Its upper reaches, however, remained pure and open for a long time: in 1860, it was still 'an open, clear, and sparkling brook' which ran



24. The Effra gushes out into the Thames at Vauxhall, 1992.

'over a gravelly bottom through the Dulwich fields and supplied fresh water to the neighbourhood'. The lower part of the stream was partly filled in even then: thus the part adjoining the grounds of the vicarage of Kennington Church was filled in by the incumbent between 1837 and 1857 at a cost of £322. Later, in 1880, the raised banks for spectators around the Oval cricket ground were completed by using earth excavated during the enclosing of the adjacent Effra. But even today a quarter-mile stretch can be seen above ground near Dulwich village, serving as an ornamental water (see p. 112).

The name of the stream is derived, according to Besant, from the Celtic 'yfrid', a torrent: Ruskin (1875), less probably, regarded it as 'doubtless shortened from Effrena, signifying the "Unbridled" river: recently, I regret to say, bricked over for the convenience of Mr Boffin, chemist, and others'. The lowest half-mile of the stream was often called Vauxhall Creek.

3. The Earl's Sluice

There was a stream which arose near Denmark Hill[15] and ran north for about a mile before turning east, crossing Camberwell Road at Walworth Bridge, and running along the southern border of Walworth Common (now Albany Road). Almost all the written descriptions claim that it continued north to join the Thames at Bermondsey. Certainly there was a stream ending at Bermondsey, but it was not this one,[16] as not only is there no map confirming this interpretation but there are several[17] which unmistakably show that the watercourse from this point flowed eastwards to join the Thames at Deptford, and one map gives it the name of the Earl's Sluice.

The stream received a tributary from Peckham Rye which was known locally as the Peck, and whose bed is still visible in Peckham Park. The main part of the stream was enclosed as the Earl Main Sewer in 1820–3, but the section nearest to the Old Kent Road remained open until 1831.

The name 'Earl's Sluice' would seem to date from early in the twelfth century, when the first Earl of Gloucester, an illegitimate son of Henry I, was Lord of the Manor of Camberwell and Peckham.

4. The Neckinger

This was the name of the stream which ran down from Bermondsey Abbey to the Thames; it is said that it was navigable up to the Abbey. St Saviour's Dock[18] still represents the lowest part of the stream (see Ills 25 and 26) although it was considerably altered in this area by the construction of channels to feed the Abbey water-mill, leading to the

25. St Saviour's Dock, Bermondsey, at low tide. It was originally the mouth of the Neckinger and was once noted for its swans and fishing.

creation of the area known as Jacob's Island.

There are no maps which show its upper part clearly, but it appears to have been continuous with the Lock stream, which ran eastwards from Newington Butts, formed a pond near the Lock Hospital, and crossed Great Dover Street near the first milestone from London Bridge. It seems then to have turned south-east for a short distance, before turning north-east again, parallel to what is now Tower Bridge Road, and 'meandering through fields and tenter-grounds to the river' along the line of Abbey Street. This description is based on that of Besant (1899), who adds that the monks of Bermondsey built a bridge across the stream, probably in the thirteenth century, which was revealed in the construction of a new sewer in the nineteenth century and found to be of 9 feet span and built of stone in good condition. Unfortunately he omits to mention where it was. But the LCC *Survey of London* (vol. xxv), which says that the Lock stream formed part of Duffield's sluice, evidently agrees with Besant's course, since Veitch's map marks Duffield's sluice as following this course.

Rocque's map shows the Lock stream as continued right round the west side of St George's Fields to near the site of today's Waterloo station. In 1771 the secretary of the Magdalen Hospital, in St George's

26. The barge in the middle distance in the centre of the picture is lying in the mouth of St Saviour's Dock, formerly part of the river Neckinger.

Fields, asked permission to make a ditch to take the water from the hospital into what was apparently the watercourse shown by Rocque: this was described as ending by running parallel to Blackfriars Road and emptying into the Thames.[19] It was also presumably this stream of which traces were found 'a little while ago near the Elephant and Castle'.[20] No doubt it was in part artificial, but it is hard to say at this date how great the part was. The same may be said of the connecting watercourse between the Neckinger and the Earl's Sluice, which at one time ran down the north side of the Upper Old Kent Road.[21]

The name of the stream comes from Neckinger Wharf, at its termination, which appears on a map of 1740 as the 'Devol's Neckenger': this is supposed to derive from the fact that Thames pirates were executed there, and the rope which was used to hang them became known as the Devil's neckcloth or 'neckinger'.

5. Rotherhithe Mill-streams

There were at least two of these, as shown on the street-map. They are marked by Rocque and Horwood, one forming a complicated little group of islands, the other a large lake. Though doubtless altered for use as mill-streams, these were probably originally natural watercourses.

NOTES

1. By Spurrell
2. Shown by Rocque and by Cary. It also appears in Faden's map, in which the stream is traced to a source much further from the Thames: however, for reasons which are discussed on p. 52, this cannot be accepted.
3. Chambers – quoted by Foord. (Evidently the hypertensive barman is not a new phenomenon.) There are several pictures of the inn.
4. Taylor.
5. Besant (1899).
6. Whose information seems to be derived partly from Besant and partly from a description given by 'an old inhabitant of Stockwell who could look back some fifty years with a clear memory' to a representative of the *South London Press* in 1891.
7. But it appears from a remark on p. 31 of his *Early London* ('I am informed by a correspondent that this is wrong and that it really rose in the hills of Norwood.') that he knew very little about the Effra.
8. *Notes and Queries*, 8th series, vol. viii, pp. 282, 375, 452.
9. By a bridge drawn by Ruskin in 1832 when he was thirteen years old. He later (1885) recalled: 'This sketch was the first in which I was ever supposed to show any talent for drawing.'
10. Foord.
11. Marked on the plan of the manor of Vauxhall of 1636.
12. Brayley. Merton Abbey was itself on the banks of the Wandle: presumably the bridge over the Effra was on the route used between Merton and London. Becket was educated at Merton Abbey.
13. Foord has it join the Thames downstream of Vauxhall Bridge, but there are many maps to show this is wrong, e.g. Horwood, and Laurie and Whittle.
14. L.C.C. *Survey of London*, vol. xxvi – Lambeth (Part 2): Southern area), 1956: this contains much valuable information on the lower part of the Effra.
15. Much valuable material in this section is derived from Mr W.J.A. Hahn, former Chief Librarian of Camberwell, through the kindness of Miss G. Johnson, who subsequently occupied his post. Mr Hahn received the information from his father, and it has in fact been handed down from father to son throughout the 180 years during which his family have lived in Camberwell. I must add that Mr Hahn is not responsible for my views on the destination of this Walworth stream.
16. It was the Neckinger, discussed in the next section.
17. e.g. Rocque, Faden, Laurie and Whittle: the stream is named only by the last. The L.C.C. *Survey of London*, vol. xxv, St George's Fields (1955), takes the same view about the course of the stream here.
18. Rocque marks it as 'Savory dock'. The name 'St Saviour's Dock' was originally applied to an inlet near the cathedral of that name in Southwark.
19. L.C.C. *Survey of London* (Lambeth). Permission was granted provided the new ditch was 'arched over' within twelve months.
20. Kent, who gives it the curious name of the Tygris.
21. Partly shown on a few maps. This must be the watercourse crossed by the bridge in Upper Grange Road (now Dunton Road) which is illustrated by Thornbury and Walford.

Chapter Six

THE RIVERS OF THE EAST

THESE ARE NOT described in any of the existing literature on the lost rivers of London.

1. A Watercourse at Wapping

This is shown on a map of the precincts of St Mary Graces, Tower Hill, at the time of its dissolution.[1] A watercourse is marked running down each side of 'Nightingall Lane' (now Thomas More Street) just east of the Tower of London. From this map it appears to come down from Royal Mint Street, but according to Reid it came from the direction of Wellclose Square, and this fits better with the contours. It may have been little more than a drainage ditch.

2. The Black Ditch

This unattractively named stream is shown on the maps of Cruchley and Veitch. It can also be found on Horwood's map: this is carefully phrased, as although the lower part of the stream is labelled 'Common Sewer' and the middle part 'watercourse', the upper part, where it passes on to a new sheet of the map, is represented only by a line, and unless one was looking for it one could not tell that it was a watercourse at all. This illustrates one of the difficulties in tracing the courses of these old streams.

Veitch shows it arising as far west as Whitechapel, but in the other maps it cannot be traced above the pond marked on the street-map near Rhodeswell Road.[2] Its name, and its appearance only in late maps, suggest that it was at least partly artificial.

3. Hackney Brook

This was a tributary of the Lea, not directly of the Thames, but it was a stream of considerable size, is undoubtedly in London and is wholly lost, so it should be mentioned.

It arose by two heads near the Holloway Road, and ran eastwards,[3] passing close to the modern Highbury Stadium, and forming the northern boundary of the Abney Park cemetery. After crossing what was the road to Cambridge by a sandy ford, it turned southwards, and, skirting Hackney Downs, curved round to the east again to cross Mare Street (which, significantly, was Merestret in 1443) as a waters-plash. There was certainly a well in Well Street, and probably a tributary which ran down the line of this street. The lower part of the main stream continued through Hackney Wick and joined the Lea a little farther south. The Hackney Cut, which runs very close to it, is an artificial construction.

It must have been a large stream, for the Report on the Public Bridges of Middlesex in 1825 described its superficial width at flood as 70 feet at Newington, Hackney and Homerton bridges, and 100 feet at Hackney Wick Bridge.

NOTES

1. Part of this map is reproduced in Ill. 50. The Abbey itself was situated near where the Royal Mint now stands.
2. Rhodes Well is marked by Horwood, but on Rocque's map of some fifty years before it appears as Rogue's Well.
3. The course was traced out by E. Bolus in 1909 and recorded in a sketch-map for the North London Antiquarian Society. (I am very grateful to Mr H. Wilson, the Borough Librarian, for the details of this.) The second, more westerly source, is shown by Veitch, and conforms well to the contours. The lower half of the stream is shown by Seller and by Rocque.

Chapter Seven

DUBIOUS LOST RIVERS

THERE ARE several places in which it has been stated that a lost river exists, when in fact this is improbable. Sometimes there is little more justification for these rivers than some name which sounds as though it had something to do with a stream or watercourse.

1. The 'Langborne'

Stow writes: 'Langborne water, so called of the length thereof, was a great stream breaking out of the ground in Fenchurch Street, which ran with a swift course, west, through that street, athwart Gra Street [Gracechurch Street] and down Lumbard Street, to the west end of St Mary Wolnothes church, and then turning the course down Shareborne Lane, so termed of sharing or dividing, it brake into divers rills or rillets to the river of Thames: of this bourn that ward took the name, and is till this day called Langborne ward. This bourn also is long since stopped up at the head, and the rest of the course filled up and paved over, so that no sign thereof remaineth more than the names aforesaid.'

Certainly there is a ward 'till this day called Langborne' and it is a very odd shape, like the wings of a butterfly, but there are three considerations against accepting Stow's statement.

(i) It does not fit in with the contours, and actually involves the proposed stream's flowing uphill to the extent of three feet, both in the ancient and the modern ground levels.[1]

(ii) During the construction of the Gracechurch Street sewer the builders specifically looked for it and found no traces.[1]

(iii) Stow more or less admits that he himself has nothing more to go on than the name.

2. 'Shoreditch'

There are three interpretations which are usually offered for this name.

(i) It refers to Jane Shore, the enigmatic mistress of Edward IV, who drifts in and out of Shakespeare's *Richard III*. Richard treated her very cruelly when he came to power, and she is believed to have died in Shoreditch in 1527 in miserable poverty. In Percy's *Reliques* she is credited with the following lines:

> Thus weary of my life at length
> I yielded up my vital strength
> Within a ditch of loathsome scent
> Where common dogs did much frequent.
>
> The which now since my dying daye
> Is Shoreditch called, as authors say;
> Which is a witness of my sinne
> For being concubine to a King.

Ingenious as this theory is, it is certainly untrue, for the name was in use earlier.

(ii) The name simply means sewer-ditch, 'shore' being known to be a common term for sewer.

(iii) The name is derived from the lords of the manor whose name was Soerdich, and therefore has nothing to do with ditches at all.

The *Place Names of Middlesex*[2] does not commit itself, but it is evident that the earliest forms have no H in. The Official Guide to the borough rejects all three theories, and says that the Soerdichs got their name from the district, not the other way round. It suggests that the original Anglo-Saxon form is Sordig, but goes no further than this.

Clearly the etymological evidence for a river here is inadequate. Furthermore, there is no continuous valley down which the stream might flow, as a neck of higher ground at Aldgate connects the eastern hill of the City and the slight hill on its north-east.[3] Almost the only evidence is Veitch's map (1851), showing sewers following the courses of old rivers. He marks a continuous watercourse called Shoreditch running down to join the Thames immediately on the east side of the Tower. Ormsby, who seems uncertain whether to accept this or not, points out that Aldgate was built on piles, and hints that the rise in the ground may be artificial. But if there had been a continuous valley down this line, it is difficult to understand why the Romans should have forsaken their usual policy (see p. 76) and built their city wall along the bottom of the valley instead of higher up the slope. Veitch's watercourse is so close to the Tower as to exclude any confusion with the Wapping stream (for which he marks a separate valley), and I would suggest that the lower part of the sewer he shows was in fact the old City Ditch (which ran round outside the wall) since it is known that at least a small part of this was covered in or converted into a sewer in the reign of Elizabeth I.[4]

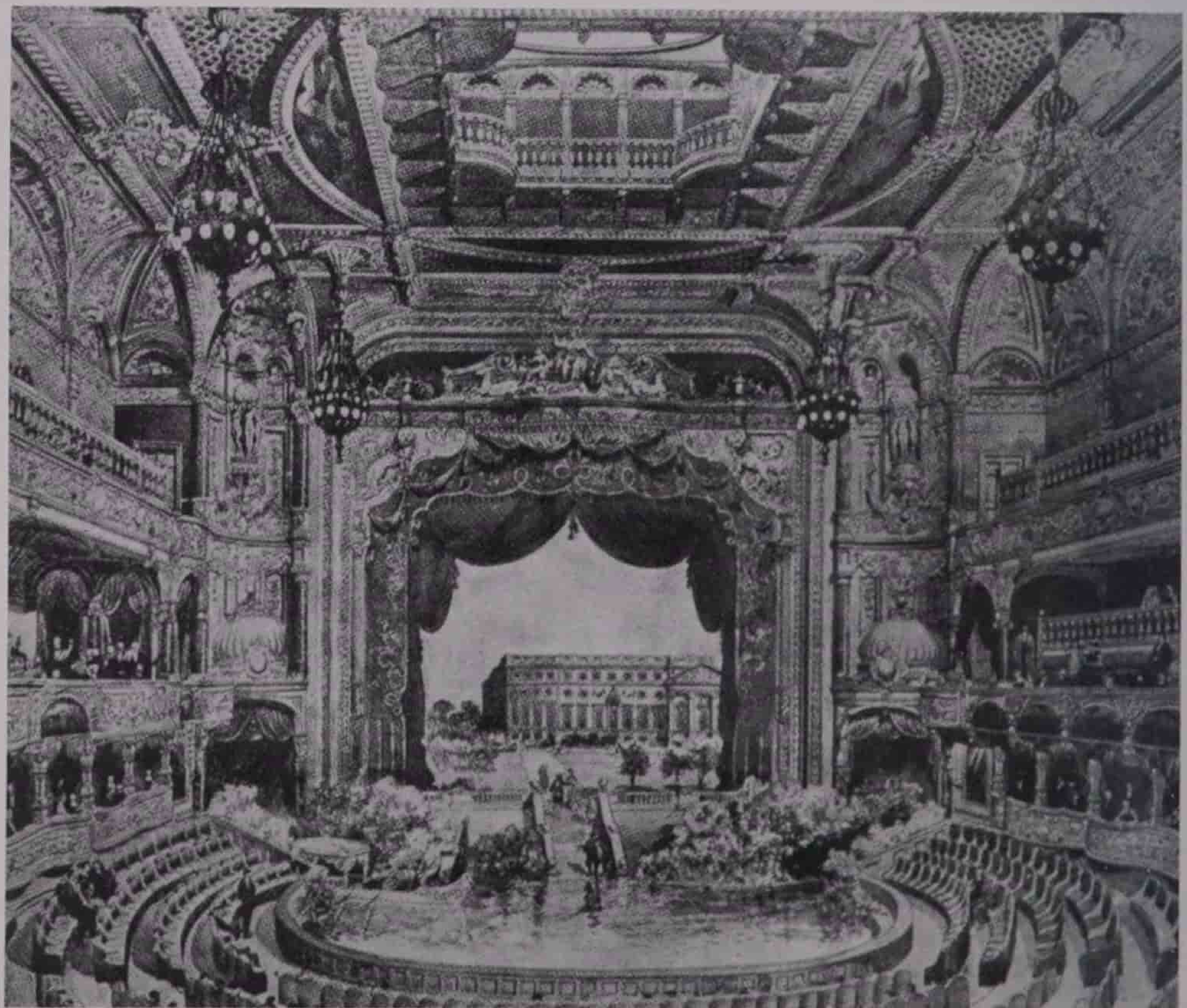
3. The 'Cranbourn'

In the earliest days of the London Hippodrome water-shows were staged there, and it is said that the tank was filled from a stream which ran underneath the theatre. I saw the tank under the stage when the theatre was altered in the 1950s, but not only have I not seen the stream but I have neither heard nor read anything else about it. The story at the theatre is that it was called the Cranbourn, but in fact Cranbourn Street is named after the Cecils, Earls of Salisbury, who owned the land and whose second title is Viscount Cranbourn.

Likewise there is a night-club in Meard Street, called the Mandrake, which has a grate in the basement beneath which waters can be seen running in a southward direction. The proprietor says it was called the River Dean but this is again wrong since Dean Street is named after Bishop Compton, Dean of the Chapel Royal, who is also remembered near by in Old Compton Street.

Now this is a very mysterious thing, as not only is no stream marked in this area in any old map (and the area is shown clearly and in detail in Agas's map[5] and in the plan of Soho of 1585), but the modern large-scale sewer map previously kept by the Greater London Council also indicates nothing to explain either of these findings.

27. Interior of the London Hippodrome, 1900, showing water as part of the scenario.



A possible explanation is given below, together with a map of the area (Map 7).

It is known that there was a watercourse described as 'ancient' in 1679, running down St Martin's Lane to St Martin-in-the-Fields, and thence to the Thames. This drained the area now called Seven Dials, formerly an unhealthy place called Marshland[6] and surrounded by a ditch of which this watercourse formed a continuation. This was the sewer common to the parishes of St Martin's and St Giles, and its upper part was called (at any rate after 1666) the Cock and Pye Ditch, from the adjacent inn. It was built over in 1671.

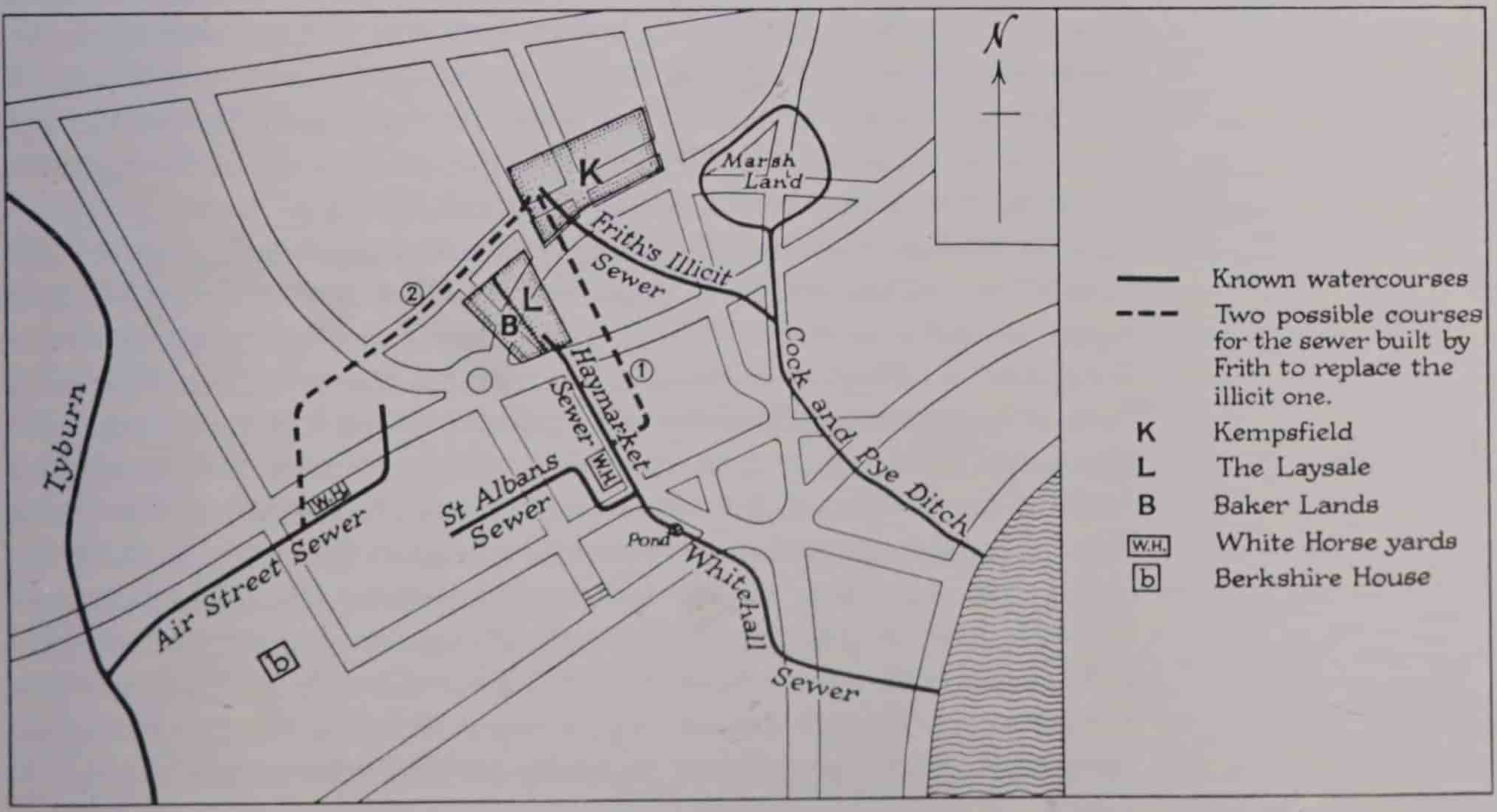
The minutes of the Westminster Commissioners for Sewers (see p. 127) contain the following entry for 22 February 1679:

'We do find that Richard Frith the builder in Kempsfield at Soho Fields hath already erected 257 houses there and ground laid out for about 300 houses more.

'that the sayd Richard Frith hath brought a sewer from all those fields into the sewer belonging to St Giles and St Martin's parishes which considering the great quantity of water brought from those fields at present and what is likely to be brought from them (?) appears to us to be a great annoyance to the antient sewer if that sewer [i.e. Frith's, presumably] be continued.

'that we have questioned the sayd Frith whether he had authority to bring his water into the antient sewer and he could give us no Afit [affidavit?] thereof.'

This incident is only one of many clashes at this period between the


N
Marsh Land
K
L
B
②
①
Frith's Illicit Sewer
Cock and Pye Ditch
Haymarket Sewer
W.H.
St Albans Sewer
Air Street Sewer
W.H.
Tyburn
Pond
Whitehall Sewer
b
Known watercourses
Two possible courses for the sewer built by Frith to replace the illicit one.
K Kempsfield
L The Laysale
B Baker Lands
W.H. White Horse yards
b Berkshire House

MAP 7. *Sewers constructed by Richard Frith, and associated watercourses.*

authorities and the speculating builders who were so rapidly extending the fringe of London, and in tracing its consequences one gains a fascinating insight into this period of London's history.

Richard Frith made a lot of money by building in the Berkeley Square area and in Soho, where his name is remembered in Frith Street. However, his life was a succession of lawsuits,[7] and his riches seem to have evaporated so much that he actually spent a spell in prison, probably for debt. He died in 1695, still in debt and leaving a wife and two children, and was buried in his own parish church, St Clement Danes.

From the above proceedings it is evident that he owned that part of Soho called Kempsfield, which was a rectangular area north of what is now the eastern half of Shaftesbury Avenue. He may, of course, have owned only part of it: however, it is known that when the Church of St Anne, Soho, was built in 1678, the ground on which it was built abutted on its north side on land belonging to Richard Frith. Now Meard Street is about a hundred yards north of this church, and it is further stated in the minutes of the Commissioners of Sewers that Frith's 'concourse of waters' reached the common sewer in St Martin's Lane by passing down Newport Street. Newport Street was at that time the name of the road now adjoining the north side of the London Hippodrome (which was not built until 1900), and I therefore suggest that this illegal sewer is the watercourse below Meard Street and, some 200 yards to the east, below the London Hippodrome.

The question naturally suggests itself: 'What became of this illicit sewer?' The answer to this is given in the subsequent proceedings: on 26 March agreement was reached that 'The sayd Mr Frith offers that he will at his own cost make a sufficient and large sewer from the place where he hath already begun his sewer to pass by Mr Sandys his Laysale, to the White Horse Yard or thereabouts'. The word here given as 'Laysale' is difficult to read in the manuscript of the minutes but it does not look like 'Laystall' (a rubbish heap).

I can find no trace of Mr Sandys, but there was a field called the Leasall or Laysall which is described in a presentment of 1549 and again in the survey of 1650. It appears to have lain south west of Kempsfield, being described as bordering on the west on to the Baker lands. These were the property of Robert Baker, a tailor, and are known to have comprised the area of Great Windmill[8] Street and a strip of land adjoining it in the east. It is believed that the name Piccadilly is a corruption of 'Picadil', a hem or border of a garment, being a pun on Baker's trade and the fact that the houses he had built there formed, at that time, the fringe of London. He bought the land in 1612 and built eleven houses on it: he and his wife Mary lived in the northernmost two, Baker having probably retired soon after this (after 1616 he is called 'gentleman'). He died in 1623, leaving a bequest to his own church of St Martin-in-the-Fields of £2.10s.0d and another of 10s. for bread for the poor. His wife continued to live there and even indulged in some more building, despite a complaint in 1638 that she did 'annoy the springs of water which do serve Whitehall, Somerset House and the Star Chamber'. The latter sentenced the houses to be pulled down, but she avoided this by saying she would 'at her own cost convey the water from the springs in a sufficient drain of brick until it came about the houses and from thence in leaden pipes'. However, in the same year she was fined £1,000 because it was not done properly.

With regard to the White Horse Yard, there are two possible sites, not to mention any number of coloured horses and other white beasts. Both of these are compatible with the order that the new sewer should 'pass by Mr Sandys his Laysale', since this might be on either side.

It is known that there was a sewer running along the south side of Trafalgar Square, down Whitehall for a hundred yards or so, and then eastward to the Thames. This is described in a splendid scroll[9] of 1699 when the jury appointed by the Commissioners of Sewers to examine it concluded that 'there hath been, still is, and ought to be a common sewer, drain, or watercourse' along this line. It had in fact been constructed or reconstructed between 1661 and 1666, and it is evident that other sewers led into it: thus in 1664 the drain from several houses in Pall Mall was stopped up and the jury decided that the water ought to be conveyed into 'St Alborne's sewer which comes down between the Old Pall Mall and the Tennis Court'. This must be the sewer made by Henry Jermyn, Earl of St Albans,[10] when he laid out and built St James's Square in 1660 on land which had been given to him by his friend King Charles I. (He is, of course, remembered in Jermyn Street.) It also appears that the Whitehall sewer was the termination of a drain down the Haymarket from Piccadilly and Great Windmill Street, since in August 1662 Mrs Baker, not having learnt the lesson from her previous misdemeanour, pleaded guilty to stopping it up, with the result that the water from the drain overflowed and hindered the work of paving the road down to Charing Cross which had recently been enjoined by Act of Parliament. She was had up again in October and apparently she was ordered to pay a fine and ignored it, since four years later the court ordered the Clerk to prepare a schedule of fines and amercements imposed since the Restoration, especially on Mary Baker. She, however, had died the previous year, and the money was apparently paid out of her estate.

The point of all this is that there was a White Horse Yard on the site now occupied by Her Majesty's Theatre, on the west side of the lower part of the Haymarket.[11] It might be, therefore, that Frith proposed a sewer running south from Kempsfield, passing east of the Laysale, down to join the Haymarket sewer in the same way as 'St Alborne's sewer' did from the other side. This would pass through the land belonging to Colonel Panton, who had owned the land east of Haymarket for some time and had also bought the Laysale and – on the death of the incorrigible Mrs Baker – the Baker lands. The Colonel is commemorated in Panton Street.

On the other hand there was also a White Horse Inn on the south side of Piccadilly, roughly opposite the present Burlington House,[12] and since it was a famous coaching inn it must have had a yard. At first sight this seems a rather improbable direction for Frith's new sewer to follow, but there is a very interesting passage in the minutes of the Westminster Commissioners for Sewers in 1672[13] which refers to 'houses, gardens, yards and all buildings whatsoever in Ayre Street, Castle Street, and Shoog Lane in the Parish of St Martin-in-the-Fields whose waste waters do pass into the Thames through the sluice neare the King's Scholar's Pond'. All these three streets were in the area of Piccadilly Circus,[14] and this entry thus provides definite evidence of a westbound drainage from Piccadilly Circus into the Tyburn and Tachbrook. It may well be, therefore, that Frith's new sewer ran west from Kempsfield, passing north of the Laysale, to join this westbound system.

The minutes of four years earlier contain a delightful estimate which appears to be for the construction of this westbound drainage system, or part of it.[15] 'In Pursuance of your Hono^{ble} Order dated 28th Nov. 1668. We whose names are Subscribed have estimated ye Charge of making a closed sewer from Barkshire House and Cross ye Rode and then along by ye foundation of St James Parke Wall into ye Ditch that goeth to Mr Chip's House, likewise to cleanse pyle and planke ye ditch upon ye corner of ye field where ye Kings Bricks are made to ye grate at Mr Chipps, likewise to make a Brick Arch to convey ye water of ye sayd Ditch Crosse ye Roade, and ye making of a Receptacle and ye Enlarging and Cleansing ye Ditchs within ye grounds of ye L^{d} Staffords. And toe report ye same as Followeth:

p375 : 0 : 0'

The system here described appears to consist of two sewers, one from Barkshire House and one from 'ye field where ye Kings Bricks are made', joining at Mr Chips's and flowing past Lord Stafford's to join the Tyburn at Goring House, also known as Lord Arlington's house.[16] Berkshire House, which only six months before this estimate was made had been given by the King to Lady Castlemaine after they had made up a quarrel, was just north of St James's Palace, bordering on the Green Park.[17] The wall of St James's Park is shown on several maps running along the line now followed by the Mall. I do not know where the King's Bricks were made, but there is a Brick Street north of the west end of Piccadilly. Lord Stafford's house is not the modern

Stafford House on the Mall, this name being given only when the house came into the Stafford family in the nineteenth century. The unfortunate Lord Stafford of King Charles's period, who fell a victim to the Titus Oates plot and was executed on Tower Hill still protesting his innocence, lived in a house called Tart Hall 'between Buckingham Palace and the houses in St James Street', i.e. in Buckingham Gate. Mr Chips must have said goodbye long ago and I cannot trace him.

This digression serves to illustrate both the struggles of the Commissioners for Sewers against private enterprise which was often unscrupulous, and the use of the Tyburn-Tachbrook as a sewer in the seventeenth century. Returning to Richard Frith's illicit and disused sewer, it is certainly possible that it could still be in existence as a running watercourse, since it is undoubtedly true of other watercourses in London that once a channel has been made they cling to it with great persistence. In an area such as this, which is known to have been very damp underfoot, it would not be surprising if the water draining through the soil should, on reaching a channel constructed for the purpose of carrying water, accumulate in this channel and flow down it.[18]

4. Parr's Ditch

This watercourse was, as the name suggests, probably entirely artificial, having been dug by the inhabitants of Fulham and Hammersmith as a boundary between their parishes.[19] Its course, as shown on Faulkner's map, is marked on the street-map: it appears that there was later a ditch connecting it with Stamford Brook.[20] Parr's Ditch, which was also known as Black Bull Ditch (from the Inn just west of where it crossed the Hammersmith Road), remained open until 1876, when it was converted into a sewer.

5. The Ditch at Nine Elms

In 1584 there was a lawsuit[21] about the responsibility for paying for scouring and maintaining a ditch which was said to drain lands in Battersea, Clapham and Lambeth: it was claimed that these areas were 'drowned' if the sluices were not kept in good repair.

The ditch is shown on Thomas Hill's plan of Vauxhall Manor in 1681, and a small remainder of it is marked by Faden, and by Laurie and Whittle. It divided the parishes of Lambeth and Battersea, forming an island, and this, of course, accords admirably with the ending '-ea'.[22] G.W. Lambert, in the paper referred to on p. 148, which discusses disturbances which he attributes to flooding in underground watercourses, found that the cases in Battersea seemed to follow the course of this communicating channel. A tidal loop such as this, open to the Thames at both ends, would certainly be very susceptible to flooding and rapid water movements.

NOTES

1. Both these observations were made by Sir William Tite
2. Gover *et al.*, 1942.
3. See Map 8, p. 77
4. Bell, Cottrill and Spon. They also reproduce a plan of 1597 showing the part which had been covered in.
5. Agas shows, in this area, only a few bored-looking sheep and a man apparently practising semaphore.
6. This was where the Great Plague started in 1665.
7. Some of the others are listed by Johnson.
8. The Windmill itself, which stood to the west of the north end of the street, was fitted with staves and strongly built of brick covered with tile, with large lofts for corn. The residential part of the structure was, however, old and decayed, consisting of a cellar with three rooms over it, one above the other. (Kingsford.)
9. Westminster Presentments, Roll 112 (Greater London Record Office).
10. Building operations just south of Her Majesty's Theatre in the Haymarket revealed a very old brick sewer, hitherto unknown, which may be the one built by the Earl of St Albans. It was temporarily in use again for the sewage from the theatre and building site.'Old Pall Mall' is what we know as Pall Mall: the distinction is from the Mall.
11. Mentioned and marked on the map in Strype's edition of Stow.
12. Chancellor.
13. Vol. iv, p. 296.
14. Ayre Street, mentioned in 1658 as the most westerly street in London, still exists as Air Street.
15. Vol. iv, p. 51
16. Apparently this destination is specified elsewhere in the minutes (Wood), though I have not been able to find it in the original documents myself.
17. Marked in Faithorne's map.
18. This subject is further discussed on p. 134
19. Fèret.
20. See the maps of Salter and Wyld.
21. Quoted in the L.C.C. *Survey of London*, vol. xxvi.
22. Cf. the backwater excavated beside Thornea (p. 37).

Chapter Eight

THE DEVELOPMENT OF LONDON

THE LOST RIVERS, carving out for themselves valleys on their way down to the Thames, have helped to create the landscape on which London is built. These valleys are now less prominent than they were, following the archaeological law whereby 'every valley shall be exalted and every mountain and hill shall be made low', but they are still to be found all over London, although people seem to be curiously blind to hills in a town. One appreciates them best on a bicycle. The most obvious example is the Fleet Valley, once almost a ravine, the hamlets along which had suggestive names like Black Mary's Hole and Hockley-in-the-Hole: the deep bottom of the latter was only filled up about a hundred years ago. The Holborn Viaduct[1] was built for a good reason: 'whereby the dangerous declivities of the present line by Holborn and Snow Hills may be avoided',[2] and to horses and carts in icy weather these hills presented a real difficulty.[3] Even today the hill up to Percy Circus from King's Cross Road is of 1 in 17 gradient, notwithstanding that the floor of the valley is now 13 or 14 feet above its original level.[3]

The development of London as we know it today has also been affected by these streams. Roads often follow their course: a good example of this is the series of small lanes running at the bottom of the slight dip which marks the course of the Tyburn from Baker Street to Piccadilly. Farringdon Street follows the lower part of the Fleet, and the small roads west of King's Cross Road show its course farther up, as do St Pancras Way and Pancras Road still farther north. Many other instances can be detected on a street map.

Railways, which must avoid steep gradients, provide further examples. The Liverpool Street line starts off in the Walbrook valley, and crosses over as soon as it can to leave London along the valley of the Lea. The King's Cross line passes between the higher ground of Highbury and Tufnell Park over a low col between the valleys of the Fleet and Hackney Brook: the latter is followed by railways for much of its course. Cannon Street station is built near the mouth of the Walbrook, to bring it down as much as possible to the level of the low-lying ground south of the Thames. The most striking point, however, is that the only two surface railways which cross London from north to south both follow very closely the valleys of lost rivers: one the Fleet valley and the other that of Counter's Creek.[4] A proposal of 1880 to extend the District Line from Putney up the Beverley Brook valley and so to Kingston and Surbiton was defeated by those who wanted Wimbledon Common to remain a beautiful open space: instead the line was extended along the side of the Wandle valley to Wimbledon. Tramlines, also, used to follow river-valleys: the Effra and Falcon valleys were examples.

Still more remarkable is the profusion of names of streets and all sorts of establishments which derive from the lost rivers. Of the three churches which were 'upon Walbrook' (some of them literally) only one remains, but the name persists as a street, and the Walbrook Insurance Company in the City reminds us of its existence.

The Fleet south of Hampstead gives its name to a road and a primary school, and a good many shops, businesses and restaurants; in Holborn and, of course, the Fleet Street area, the river is recalled time and time again. In addition, Turnagain Lane ('Wendageynes' in 1293) refers to the Fleet, which made it a cul-de-sac. This was probably in the mind of Tyndale when, in a treatise in 1531, he referred to 'a turn againe lane which they cannot goe through'.

The Tyburn gave its name to the manor which it separated from the neighbouring manor of Lilleston.[5] Aybrook Street, Angler's Lane and Brook Street still recall the stream, but Tyburn Road and Tyburn Lane are now known as Oxford Street and Park Lane respectively. The name Marylebone is a simplified version of St Mary-by-the-bourne, referring to the little church built beside the stream in the fifteenth century: the riverside origin was evident in the arms of the old borough. Also, of course, the stream gave its name to the famous gallows at Marble Arch.[6]

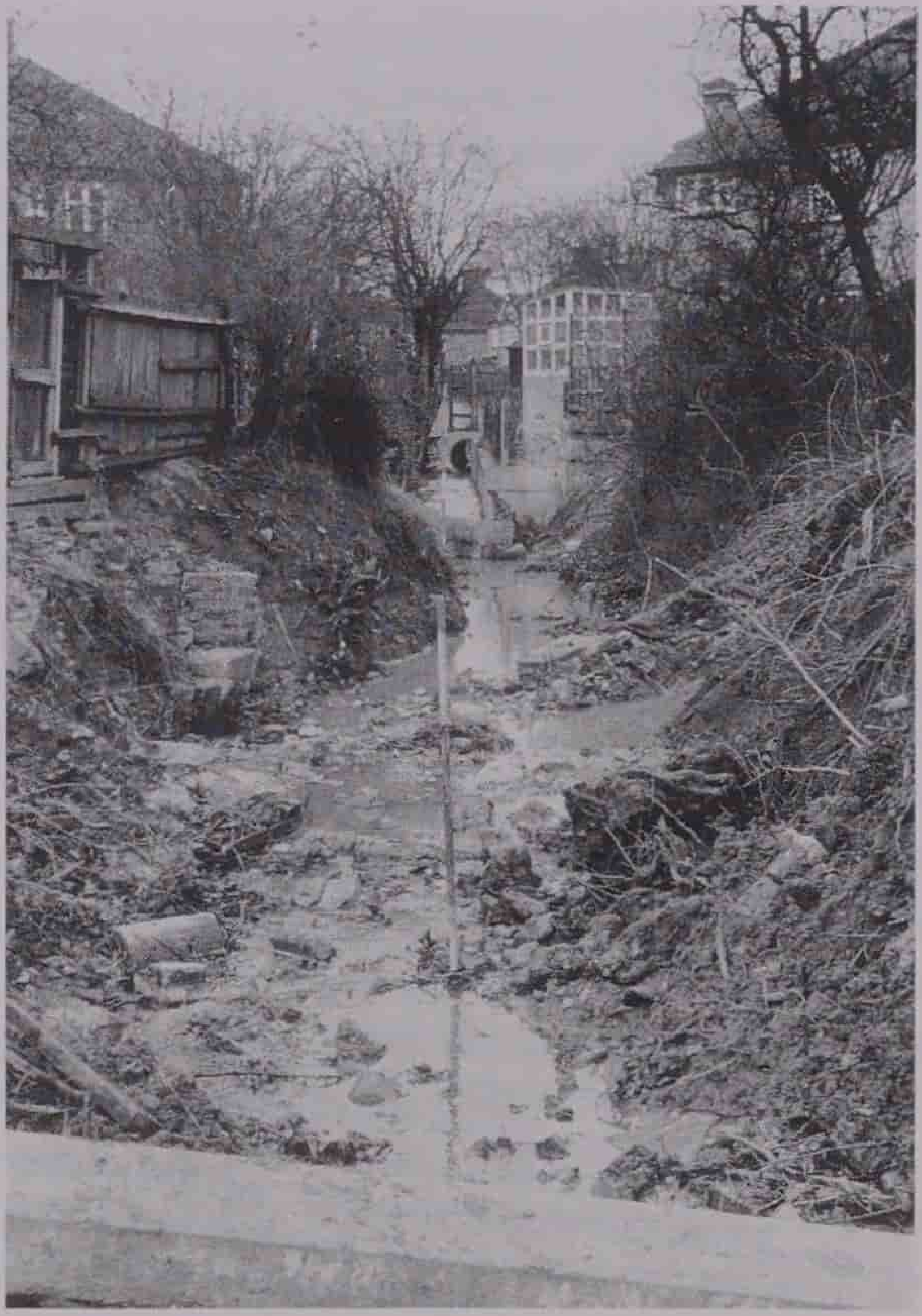
The eleven streets in the Paddington area bearing the name of Westbourne are named indirectly after the stream, and Bourne Street in Chelsea more directly. In addition there are dozens of shops and companies called Westbourne, Kilburn or Knightsbridge. Counter's Creek has been more retiring, but the sandy ford at the Fulham Road is remembered in Sands End Lane and Sandilands Lane. The stone bridge, or Stanbridge, at the King's Road later became confused in the public memory with the Sand-ford, and is now known as Stamford Bridge[7] which, as is well known, is also the name of the Chelsea Football Club stadium alongside it. The true Stamford Brook, farther west, has given its name to a whole district and even to a tube station. Brook Green is also supposed to be named after it, but the watercourse in this case seems more likely to have been Parr's Ditch.

The Falcon, though having very little written history, is remembered in several street names (viz. Falcon Road,[8] Grove and Terrace, and Creek Street), and also in two schools, and a greengrocer's, newsagent's, furnisher's and a public house in the area now bear its name. Various other streets commemorate the lost rivers of the south of London: Effra Road and Parade, Brixton Water Lane, Neckinger Street, Jacob Street, Earl Road and Cottages.[9]

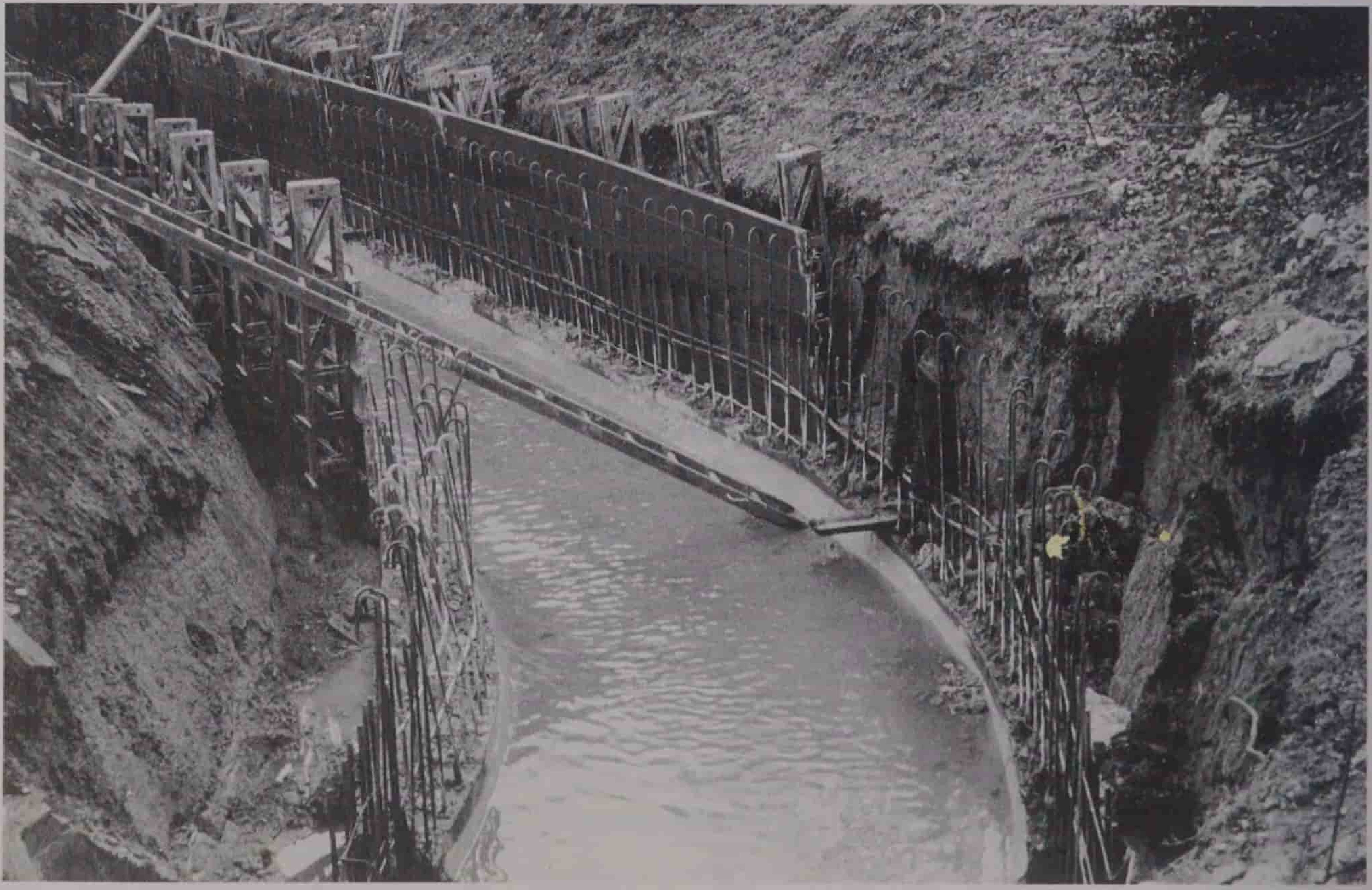
In Hackney the very name of the borough is derived from an island or 'ey' in Hackney Brook, together with the name of some Dane called Haca or Hacon who owned it: again the riverside origin appears in the arms of the borough as 'the base barry wavy of six Argent and Azure'.[10] Sanford Lane and Sanford Terrace recall the ford at the Cambridge road, which also appears, by the same curious corruption as was noted before, as Stamford Hill.[11] Many other streets in Hackney have watery names, some of which refer to the brook.

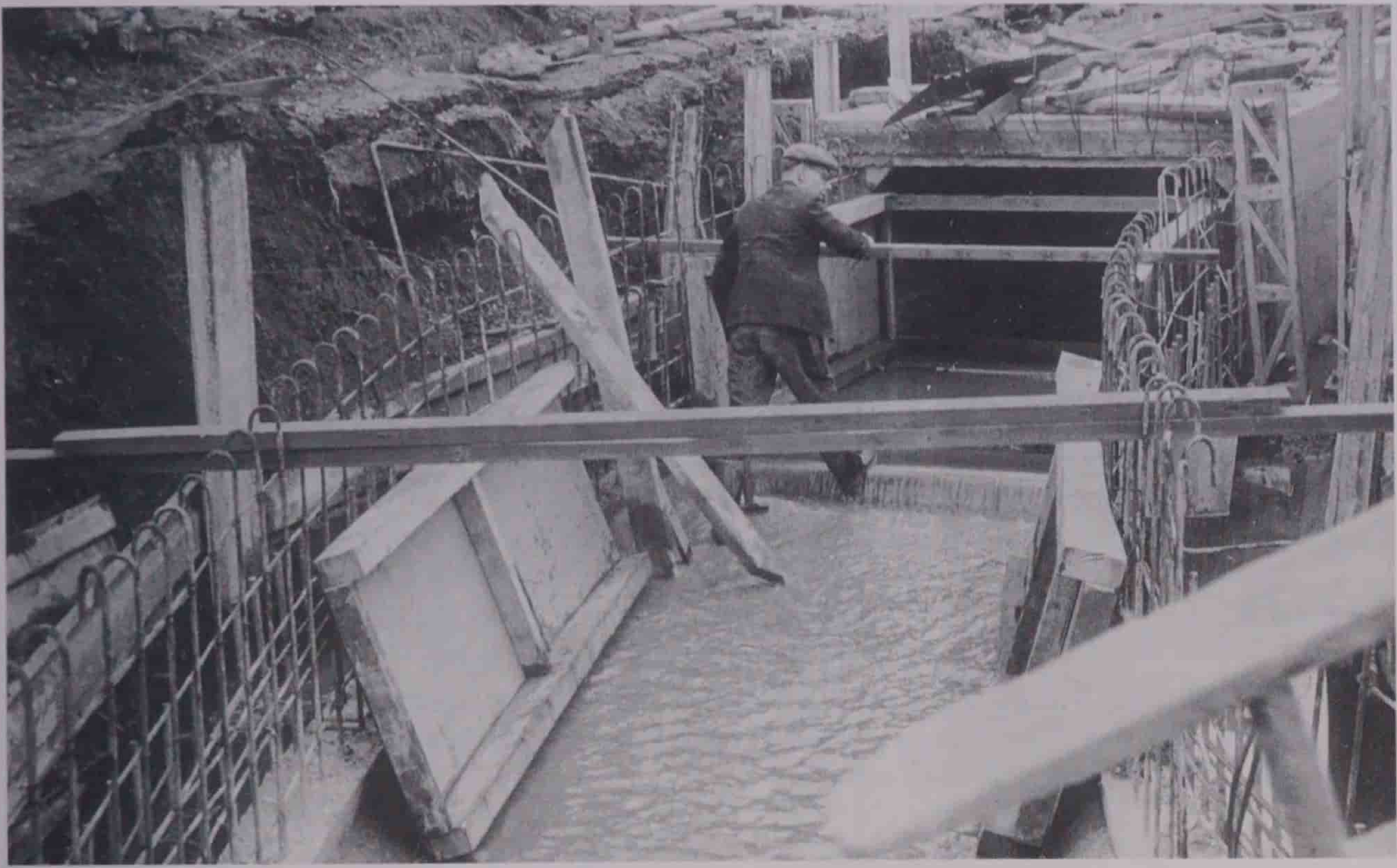
Almost every one of the lost rivers still forms some sort of boundary. We have seen how ecclesiastical property in late Saxon times was delineated by rivers: similarly the manor of Bankhurst was bounded by the Ravensbourne and one of its tributaries, the Quaggy River,[12] and the Effra divided the manors of Kennington and Vauxhall. Civic boundaries grew up in the same way: the Walbrook divided the City into thirteen eastern wards and eleven western ones, while Faggeswell Brook and the Lock stream helped to bound the City Liberties (i.e. those wards which were outside the City Wall). The Westbourne is part of the boundary of the City of Westminster. Parish boundaries also follow streams:[13] the Earl's Sluice divides Bermondsey and Rotherhithe from Camberwell and Deptford, and the Fleet separates Clerkenwell from St Andrew's, Holborn, and St Pancras.[14] The northern boundary of Lee parish, from Blackheath Station to Lewisham, follows, not the line of the railway, but the line of the stream which has now retired underground, and which joins the Quaggy at St Stephen's church, accounting for the peculiar pattern of the boundary here.[15] Some of these are now transformed into borough boundaries, such as Counter's Creek between Kensington and Chelsea on the east and Hammersmith and Fulham on the west. County boundaries, too, have been formed in this way: Earl's Sluice used to be the boundary between Surrey and Kent, and later divided the boroughs, the parliamentary constituencies and even the Police Divisions. The County of London formed in 1889 was bounded by Stamford Brook on the west, and the Lea on the east: the latter, once the frontier between Danelaw and Saxon Wessex (and thus between paganism and Christendom), separated, until 1965, Essex from London, Middlesex and Hertfordshire. It is pleasing that even some very modern boundaries follow the streams: Counter's Creek separates the postal districts of SW5 and SW10 from SW6, while the junction of SW1 and SW3 follows the lower Westbourne very loosely. The Fleet used to form the eastern limit of two telephone exchanges which, in the days before all-digital

28. Burying a river. The first of four photographs taken at different points along the Quaggy River (a tributary of the Ravensbourne) c1963. The problem, as depicted in this picture, is a river choked by rubbish and by earth from its fallen banks.



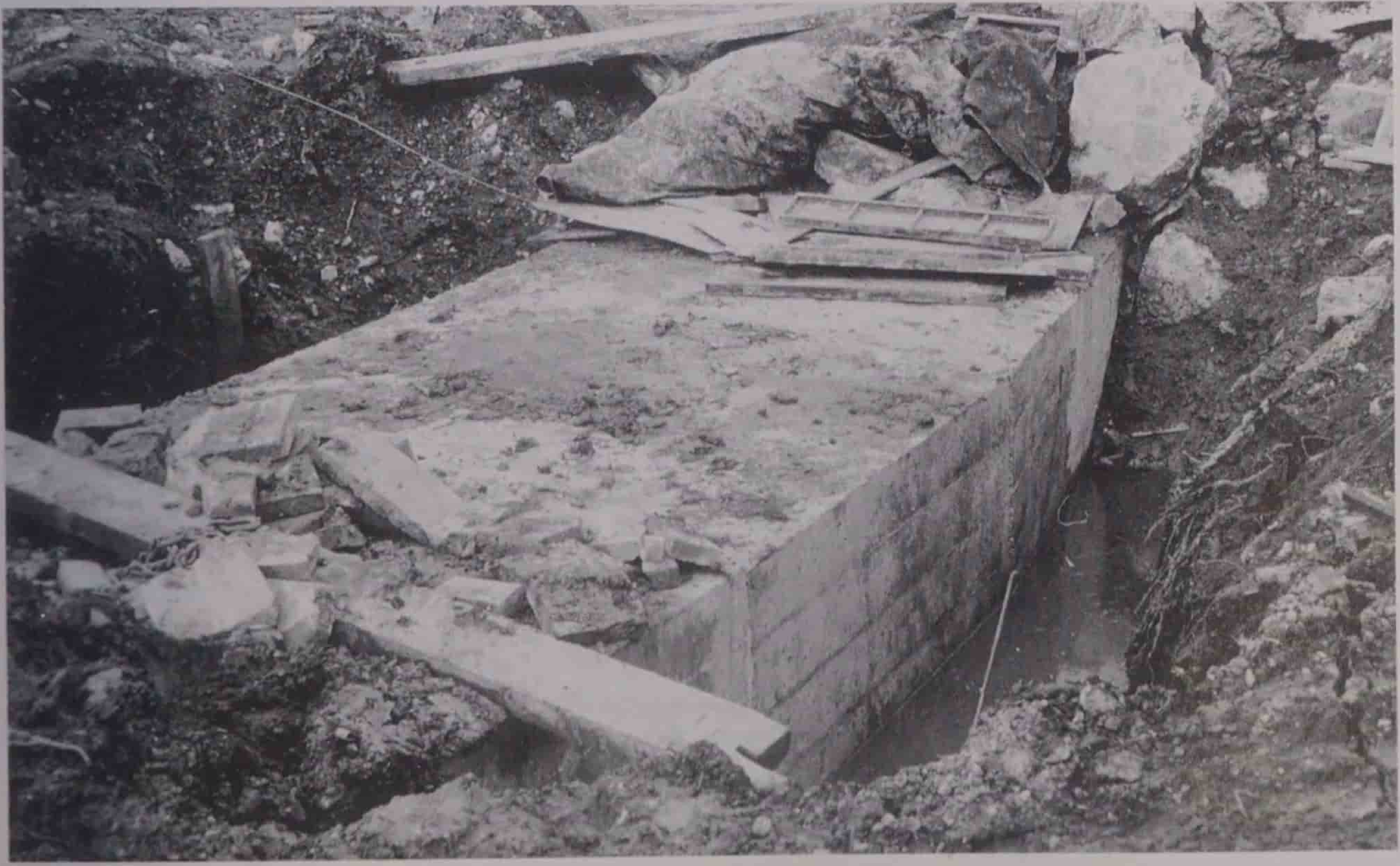
29. A concrete trough has been built in which the water now flows and side walls are being made.





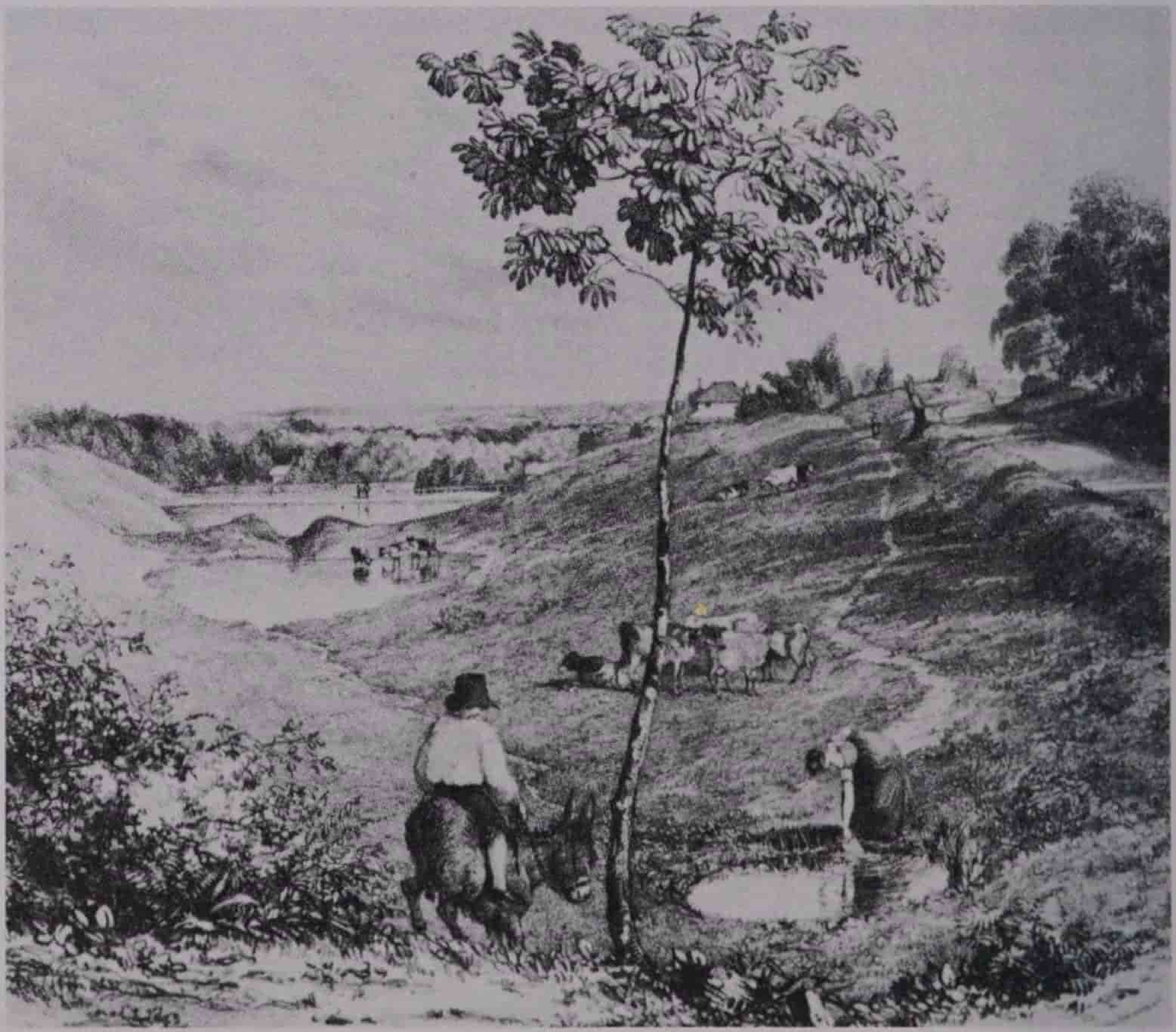
30. *A concrete roof is being added.*

31. *The river is now completely encased in concrete. When this has been covered with earth, no trace of the river will be visible.*



numbers, bore its name – Holborn and Fleet Street.

In this connection it is interesting to recall one occasion when the Fleet failed to act as a boundary. This was in the Great Fire of London in 1666. On the second day of the fire it was suggested that the houses on each side of the Fleet should be pulled down to make a broad open lane against the fire. At that time nobody could believe this would be necessary, but twenty-four hours later it was all too clear that it would be.'In feverish haste, soldiers and civilians, all who, by commands, threats, or bribes, had been persuaded to stay and give their aid, were employed in clearing a passage along the Fleet river that should leave nothing to afford fuel for the fire.' But, alas, a wave of flame rose menacingly near where old St Paul's was blazing, and 'the wind, driving through it, carried live brands and sparks high above the heads of those engaged in levelling the houses, setting buildings alight across the Fleet as far as Salisbury Court. Then, breaking the bounds set by Ludgate and the City Wall, the mass of Fire advanced with bewildering speed, licked up the dry timber houses, and, as an onlooker has described, "rushed like a torrent down Ludgate Hill". The labourers fell back before the scorching heat: their whole day's effort was in vain.'[16]



32. The source of the Ravensbourne in Bromley.

NOTES

1. Properly called (as on the foundation stone) the Holborn Valley Viaduct.
2. *Proposal for a New Road*, 1839 (in the Crosby Collection).
3. Ormsby.
4. This was by no means accidental; see p. 92
5. Remembered in Lisson Grove. It used to be thought that the Tyburn stream was named after Tyburn manor.
6. Both gallows and church are illustrated in prints by Hogarth.
7. Fèret.
8. Formerly the stream-side path.
9. The last two may merely have the same origin as Earl's Sluice, rather than being actually named after it.
10. Information H.V. Everard.
11. Bolitho and Peel, following Gover, say that 'the ford was across the River Lea'. This is obviously unlikely and is shown to be wrong by Rocque's map.
12. *Proceedings of Lewisham Antiquarian Society* (1908–12).
13. Horwood's map is especially valuable for this.
14. There is a map in Ormsby to show how closely the boundary follows the stream.
15. Information Josephine Birchenough
16. W.G. Bell (1920).

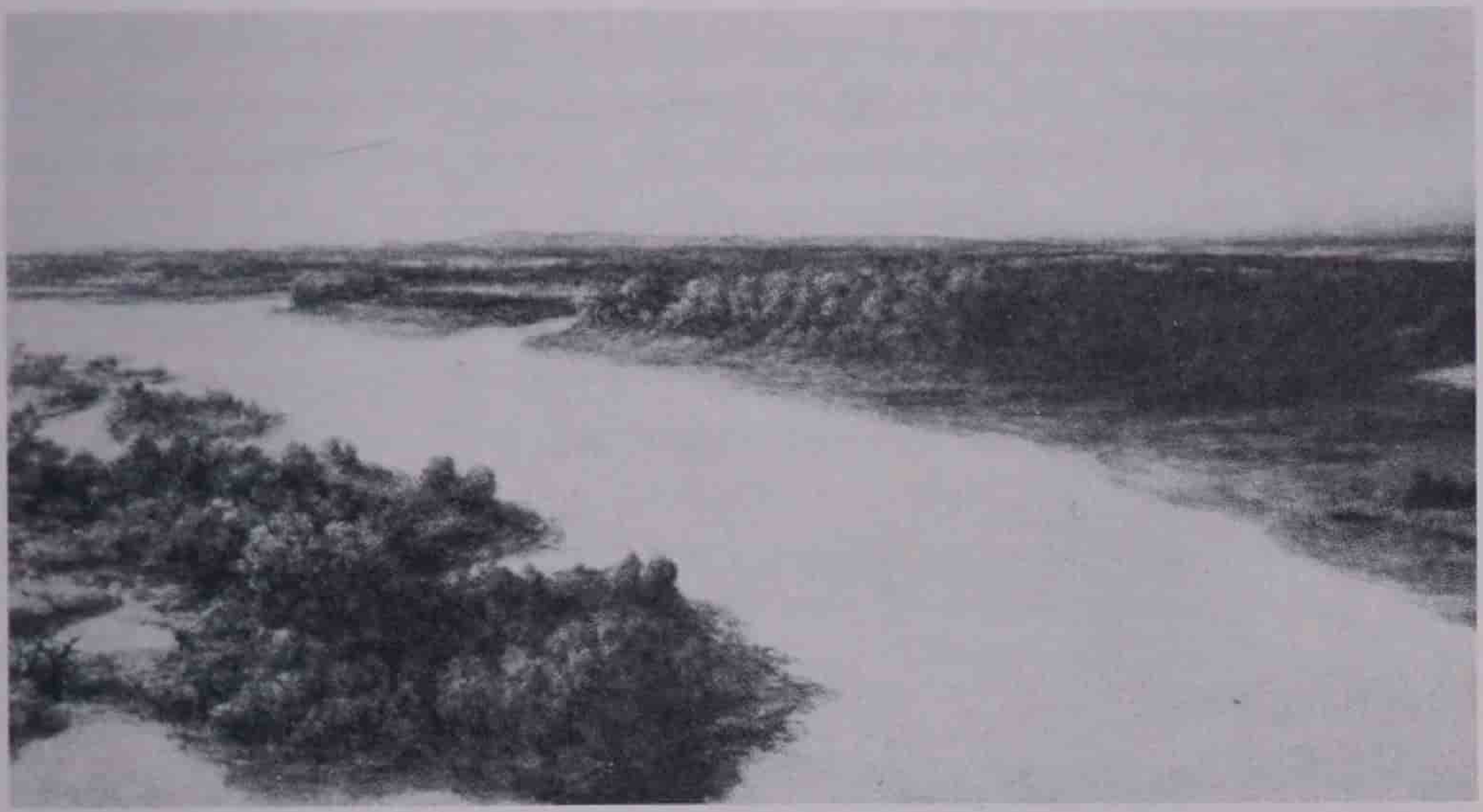
Chapter Nine

THE USES OF THE LOST RIVERS

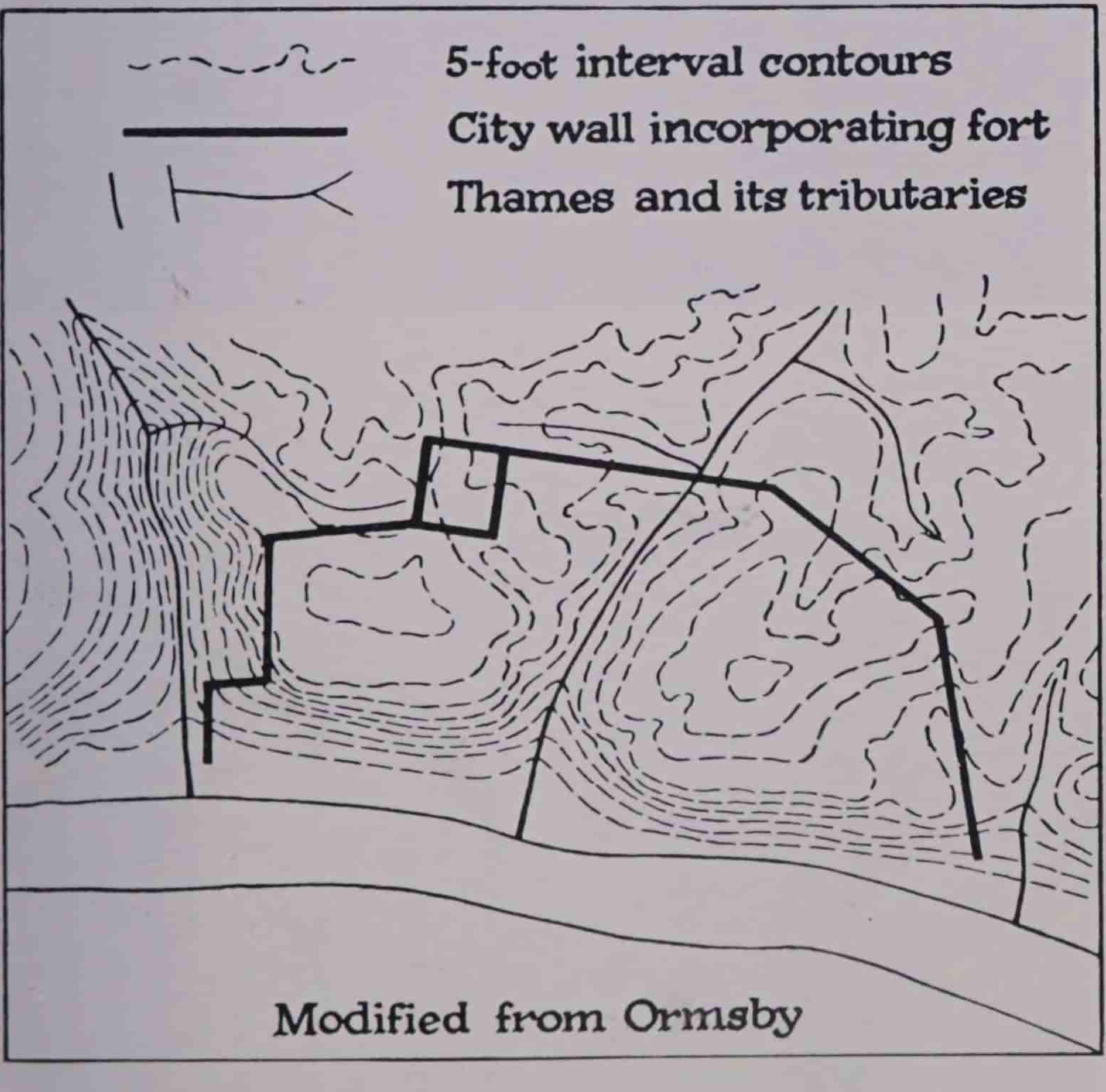
1. Military

'THERE IS still no sign of a prehistoric settlement as forerunner of the Roman City'[1] so we may conclude that as a city London was founded by the Romans. We know that they selected the sites of their cities with care: what made them choose this one? Doubtless there were many factors involved,[2] but its military value as a readily defensible position must have ranked high among them. To anyone sailing up the Thames, the pair of firm gravel hills close to the river but standing well above it, divided by a small stream and protected on all their other sides by streams and bogs, must have presented an obvious stronghold (Ill. 33). It has even been suggested that they deliberately flooded Moorfields as an additional defence. To strengthen their position further, they built a wall round the city, and Map 8 shows how this follows the natural contour of the ground and makes use of the streams outside it. They also dug a ditch outside the wall, but this was a small U-shaped trench of little defensive value. It is of considerable interest that the Cripplegate Fort, built before the wall and later incorporated in it, stands on one of the two small cols connecting the hills of the city to the higher land outside it. The other col at Aldgate (assuming it to be a natural feature – see p. 61), does not seem to have provided an avenue of attack, presumably because it was protected by marshes and by the Lea. There is a passage in Snorri Sturluson (quoted by Ormsby) in which the Northmen tie ropes from their boats around the supports of London Bridge, and, by rowing furiously, pull the bridge down. The object of this manoeuvre was to reach a position further upstream from which they could capture the town: this confirms that the eastern approach was not a practical proposition.

In Roman times, then, the lost rivers helped to decide the line of the City wall, and this is still regarded as the limit of what is really 'the City', and its gates are still remembered by name: Aldgate, Bishopsgate, Aldersgate, Moorgate, Cripplegate, Newgate and Ludgate (Ill. 34). William the Conqueror built two fortresses to secure his hold on London, and the sites of these were also influenced by streams. The



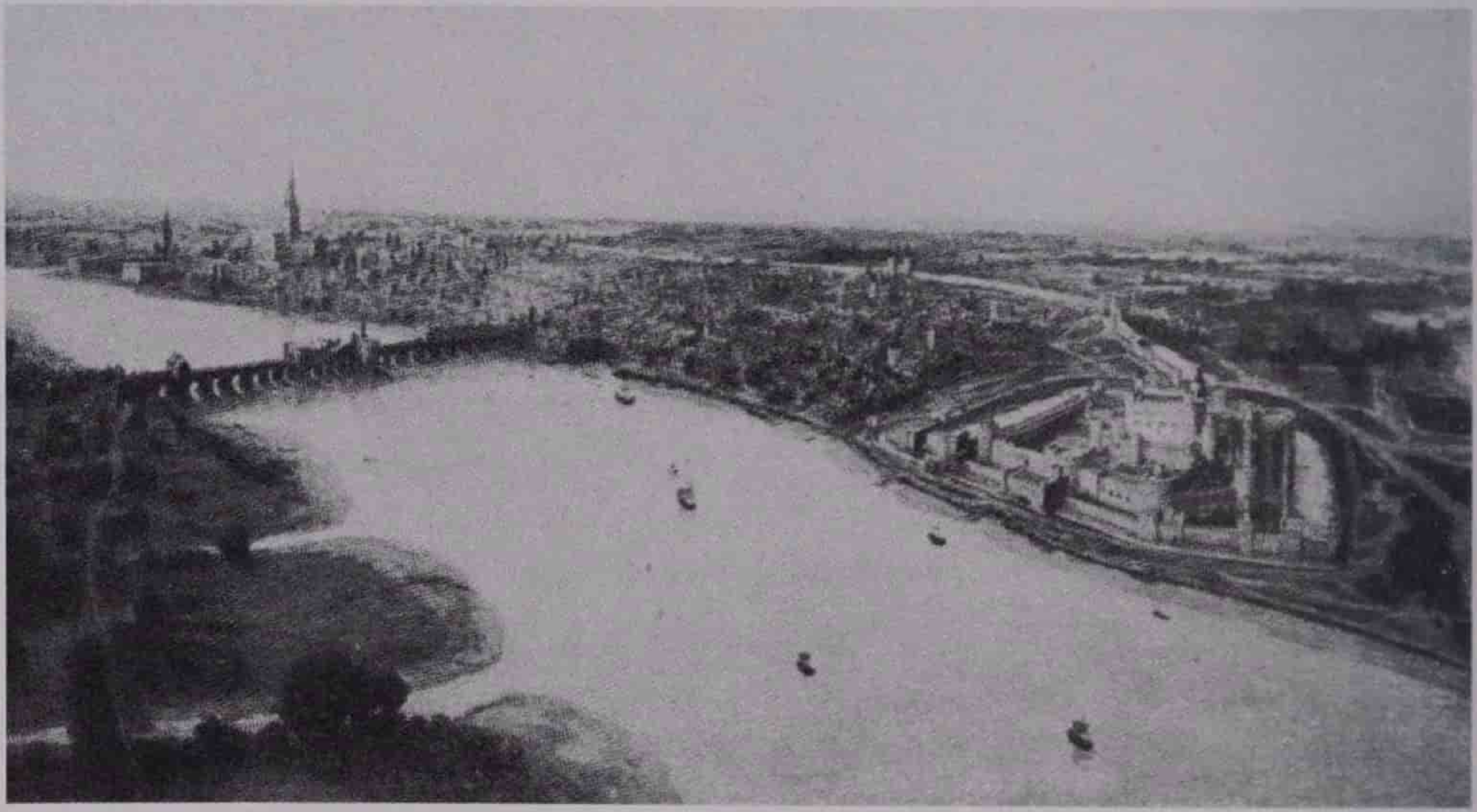
33. Artist's impression of prehistoric London from the south-east. The mouths of the Walbrook and Fleet can be seen.


5-foot interval contours
City wall incorporating fort
Thames and its tributaries
Modified from Ormsby

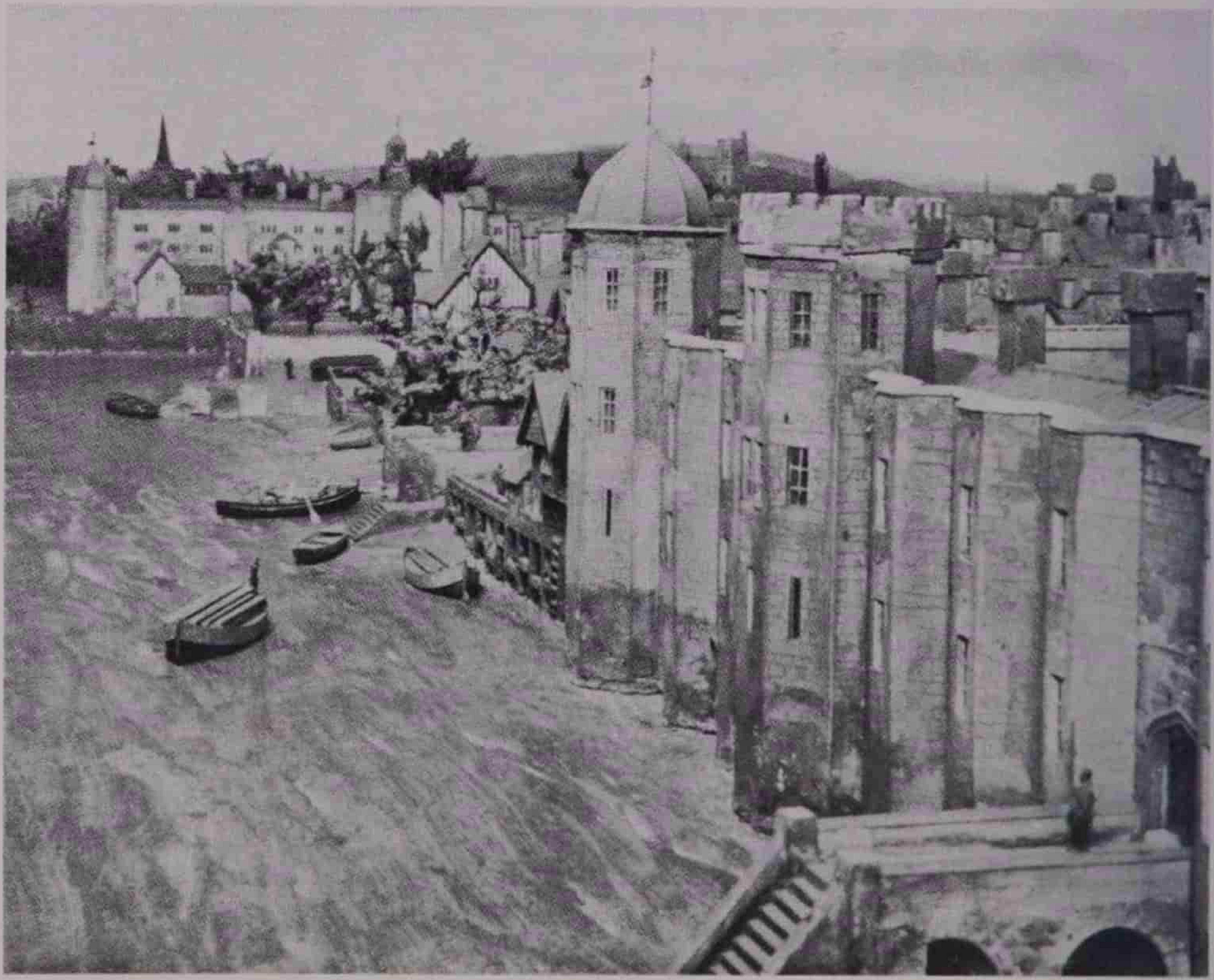
MAP 8. *Relation of Roman defences to physical formations.*

Tower of London, on the east, commanded the marshes of Wapping, and Baynard's Castle, a 'rough gloomy structure'[3] whose successor on a slightly different site was mostly destroyed in the Great Fire, stood beside the Fleet on the west (Ill. 35).

The ditch was re-cut by the citizens of London as a defence against King John, and in this form was much larger, being flat-bottomed and at least 75 feet wide,[4] although later it was made into a narrower channel. Nobody seems to know where the water for the ditch came



34. Artist's impression of London c1500, showing the moated tower, City Wall and ditch, old St Paul's and London Bridge.

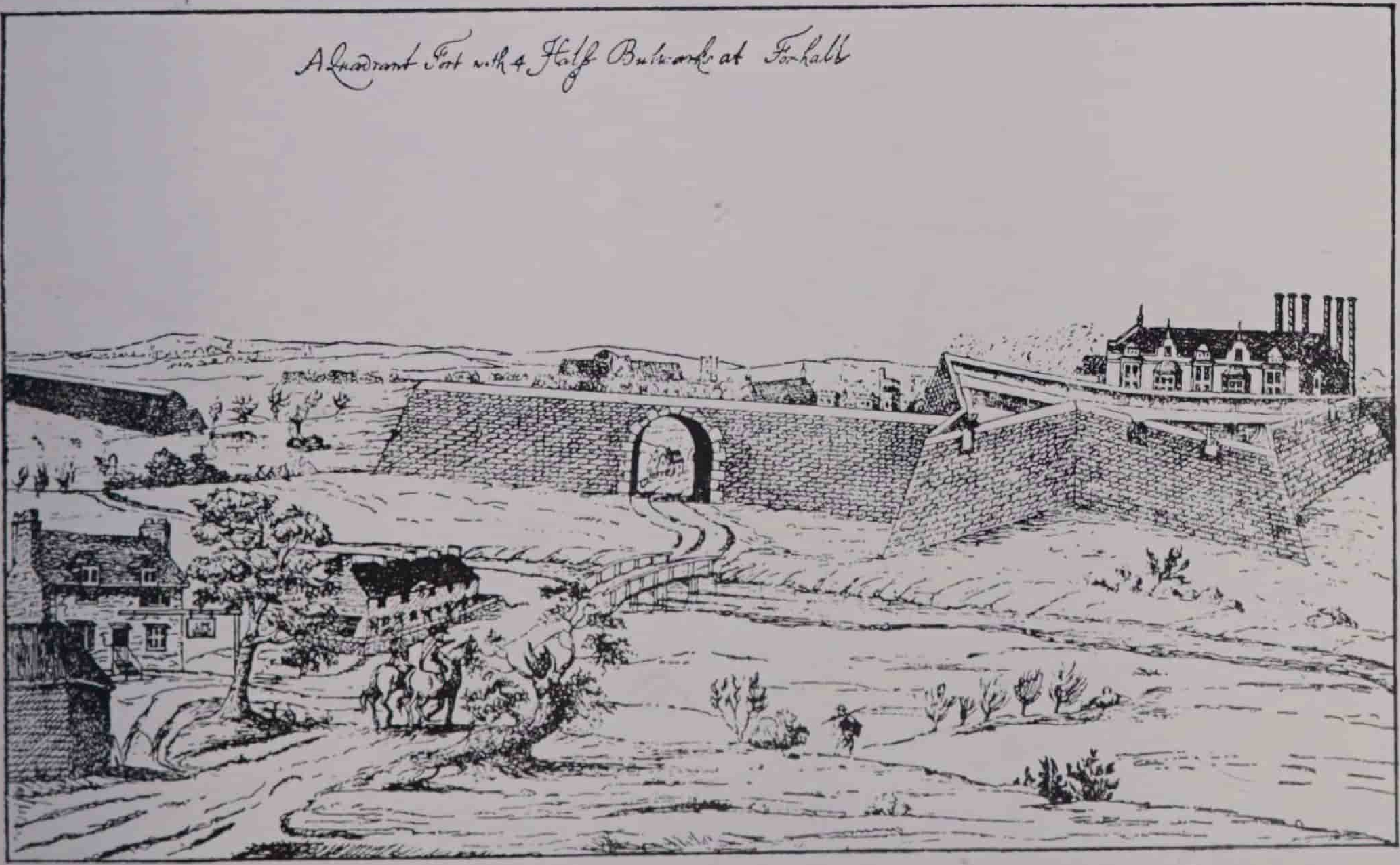


35. Model showing Baynard's Castle, and beyond it the mouth of the Fleet, c1550.

from, but it is safe to say that the Walbrook must have contributed to it, as it appears to be doing in Agas's map (1560–70). The ditch in turn helped to supply the moat of the Tower and that of the Fleet Prison,[5] although the former was also connected to the Thames and the latter to the Fleet. The northern part of the ditch was, however, at a higher level than the Thames, and therefore was not fed by it.

The next occasion on which defences were constructed for London was by the Parliamentary forces against Prince Rupert. The line of the wall,[6] which was punctuated by forts, was determined mainly by the limits of the houses, but where possible streams were made use of, as at Vauxhall (the Effra – see Ill. 36) and at Gray's Inn Road (the Lambe's Conduit tributary of the Fleet), where the remains of the breastworks could still be seen a hundred years later.[7] The rebels in the Rye House plot against the life of Charles II and his brother intended to make use of the Fleet as a line of defence, filling the windows of the houses on its east bank with musketeers and training their cannon 'upon the carriages at Fleet Bridge'.[8]

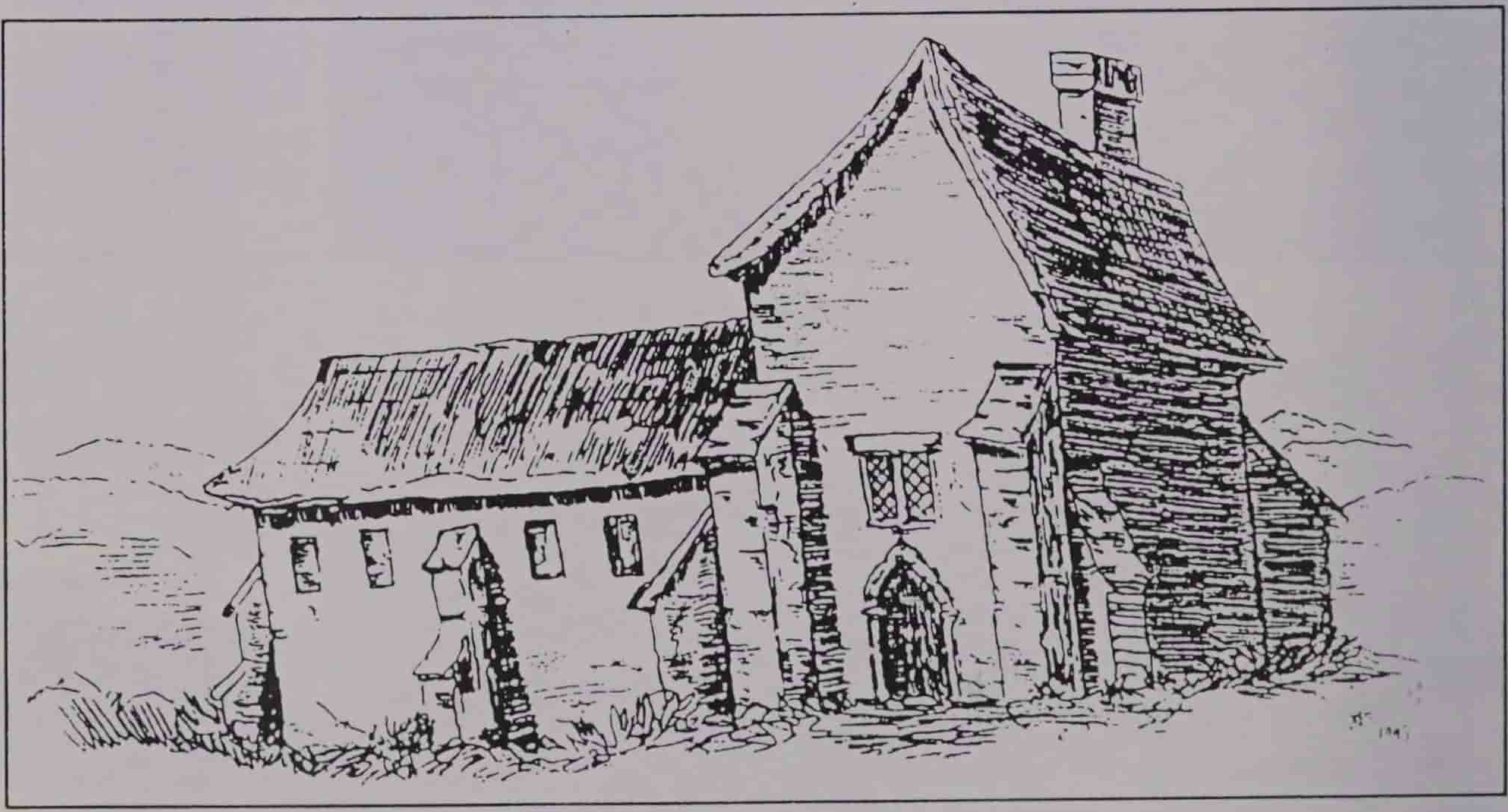
A bridge had been used, in the manner of Horatius, against the Kentish rebels in 1497: Henry VII sent Lord Daubeny, who 'made a furious attack upon them at Deptford Bridge [over the Ravensbourne] and after great slaughter put them to flight'.[9] Bridges, as necessary bottlenecks, were also favoured by robbers: Norden,[10] in 1593, de-


A Quadrant Fort with 4 Half Bulwarks at Foxhall

36. The Fort at Vauxhall erected for the defence of London during the civil War, showing the River Effra, which joins the Thames at the left. Probably one of a series of drawings attributed to Captain John Eyre, an officer in Cromwell's Own Regiment, but in fact forgeries of the mid-nineteenth century.

scribed Knightsbridge, which crossed the Westbourne, as a dangerous place for a 'true man to walke too late without good garde, unless he can make his partie good, as did Sir H. Knyvet, knight, who valiantlye defended himselfe, ther being assalted, and slew the master theefe with his owne handes'. Lower down the same stream, on the bridge which carried the King's road across it, Lord Harrington's cook was attacked and beaten to death by highwaymen, from which it was later known as Bloody Bridge.

On the other hand rivers were more usually employed for defence, as we have seen in the case of the City Ditch. Kilburn Priory, once deep in the Forest of Middlesex, and now remembered only by a few street-names and a single brass in the local church, was protected by a moat fed by the Westbourne, which also provided drinking water and fish for the inhabitants of the Priory. In the same way the moat of Headstone Manor, in which medieval archbishops of Canterbury lived when at Harrow, was and still is fed by the headwaters of the Yeading Brook.



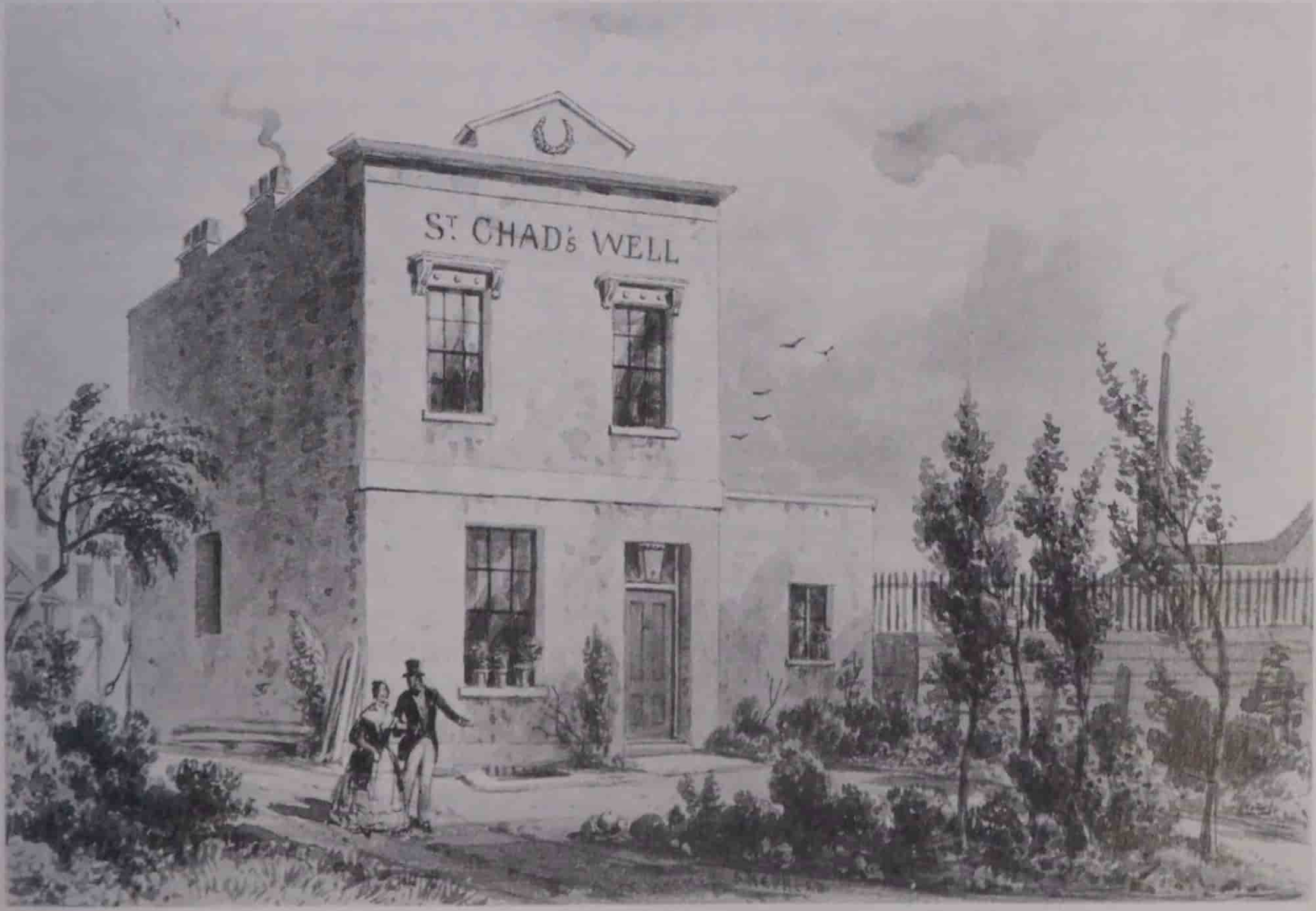
37. The remains of Kilburn Priory in 1722.

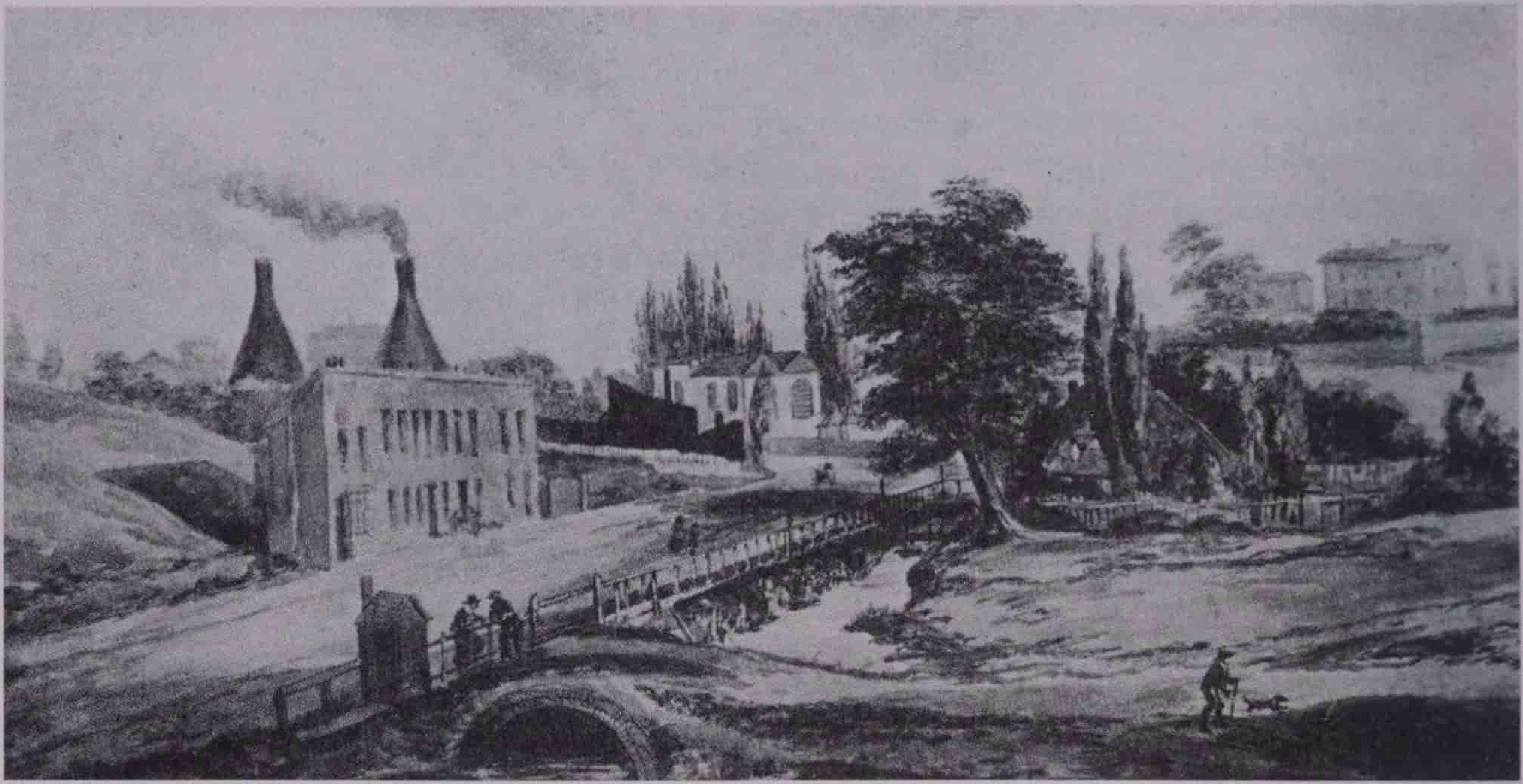
2. Water-supply

In the earliest days the water-supply for London was taken directly from the Thames and from its tributaries, and also from springs, pools and wells all over the city. Most of these wells were originally springs feeding the streams, subsequently enclosed to form a self-supplying reservoir of water. There were so many wells contributing to the Fleet (e.g. St Pancras's well, St Chad's well, St Bride's well, Clerkenwell, Bagnigge wells, Black Mary's well, and Faggeswell) that it was sometimes called the River of Wells. Nothing further will be said about wells as the subject is fully dealt with by Sunderland and by Foord. Their significance was: (*a*) Religious – several were Holy Wells; (*b*) Domestic – as water-supply; (*c*) Medical – in the eighteenth century there was a great craze for taking the waters, and wells sprang up all round London. As Waller observes, 'it must have been a somewhat tragical mirth to swallow a fluid akin to Glauber's salts and then to walk about, listening to songs (often in praise of the wells) and trying to make merry'.

That this easy water-supply soon became inadequate is apparent from the building of the Tyburn Conduit in 1236 and its extension to

38. St Chad's Well.

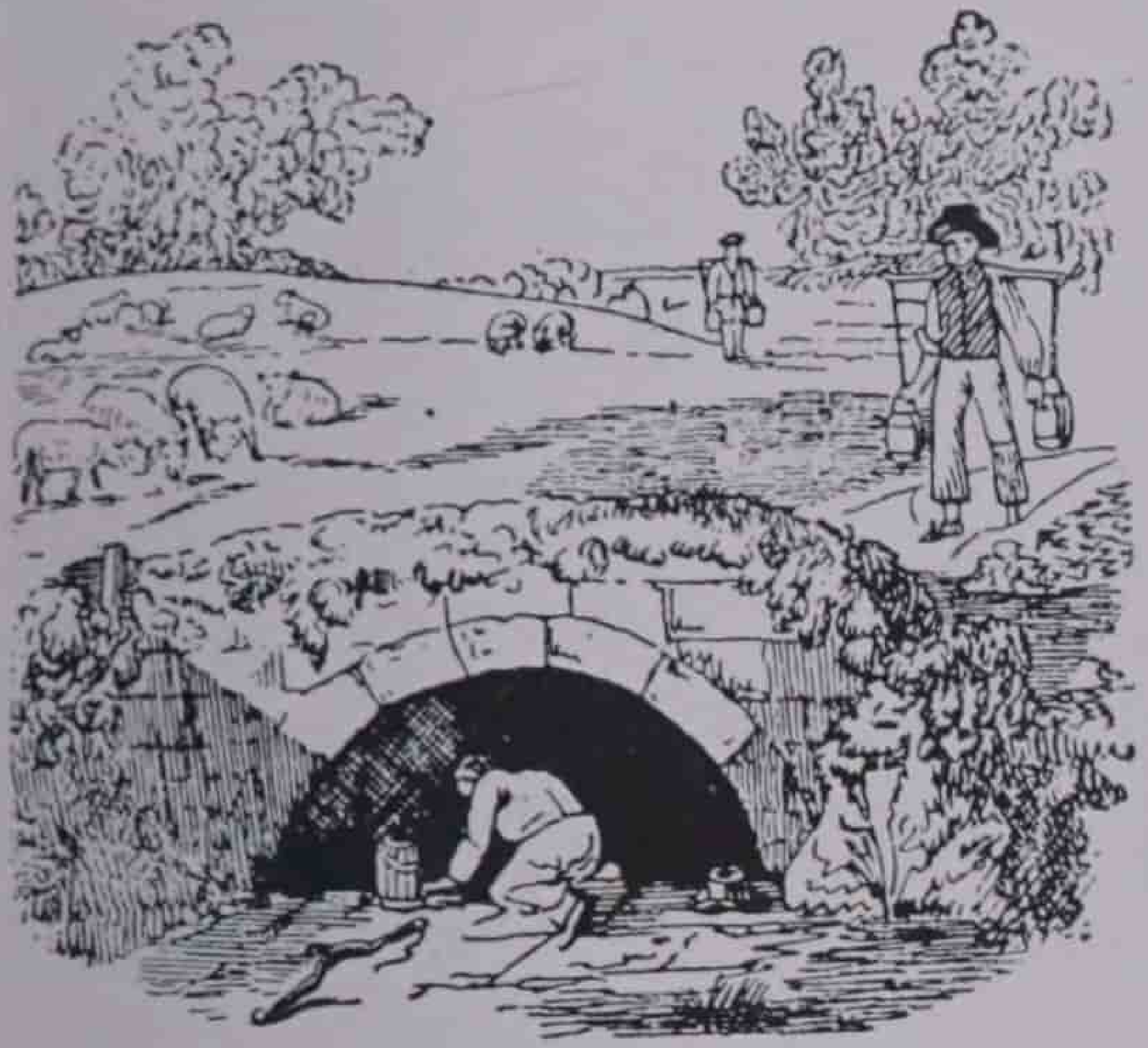




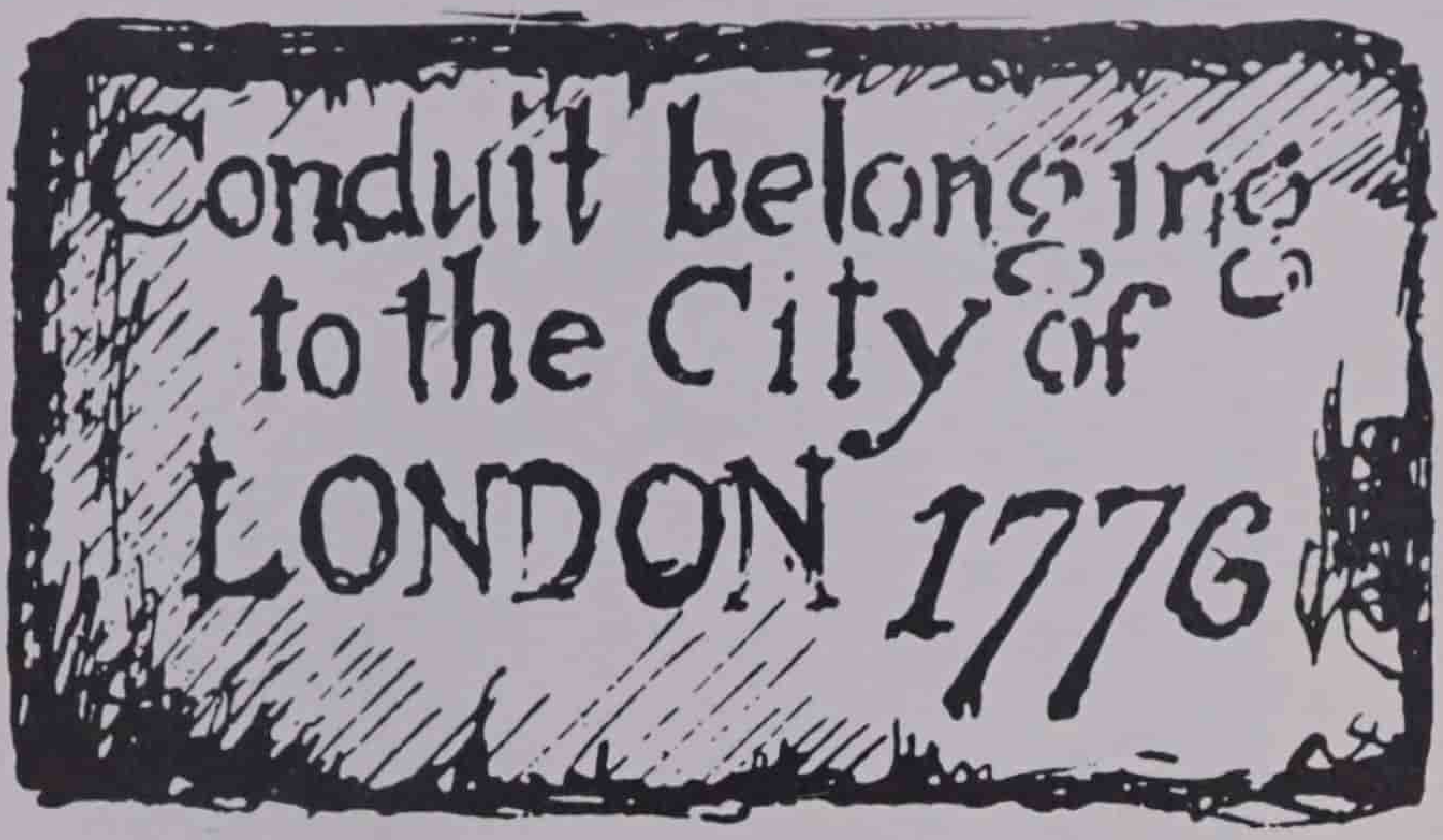
39. This print is entitled 'Bagnigge Wells and tile works' – the River Fleet is shown in the centre of the picture. However, despite the prominence of the building to the left, the actual Wells building is probably that in the distant centre.

include the springs of Paddington two hundred years later. A banqueting house (by today's Stratford Place, off Oxford Street) was built at the start of the conduit, and once a year the Lord Mayor and Aldermen came out to inspect the water-supply and have a good dinner. From Oxford Street the conduit-pipes ran down by Conduit Street to St James's Church, and then eastward along the edge of the hill. In 1683 the unfortunate Richard Frith, who had been proposing to dig for brick in the meadows west of the modern Regent Street, was involved in a lawsuit, lest damage might be caused to the pipes. The authorities may have suspected him of similar intentions to those of Colonel Panton (see p. 66), who, when developing his estate ten years earlier, had laid bare the conduit-pipes in an attempt to graft quills (private supply-pipes) into them. From there the conduit-pipes ran eastwards, keeping north of the Strand and Fleet Street, until they reached Fleet Bridge,[11] which they crossed before running up to end in the Great Conduit in Cheapside. This was a lead cistern reinforced with iron.

Later, other conduit-systems were built, such as that of Lambe (see p. 26), which supplied the Charterhouse. Richer people had pipes to their houses while others had to make use of the Brotherhood of St Christopher of the Water-bearers. In the reign of Elizabeth I the City's water-supply was augmented by the construction of reservoirs on the Fleet at Hampstead[12] and by a pipe from the Moselle (or Muswell) at Muswell Hill. However, as London grew, the demand continued to outstrip the supply, until in 1609 Sir Hugh Myddelton, a rich banker, determined to make a New River to bring water to London from



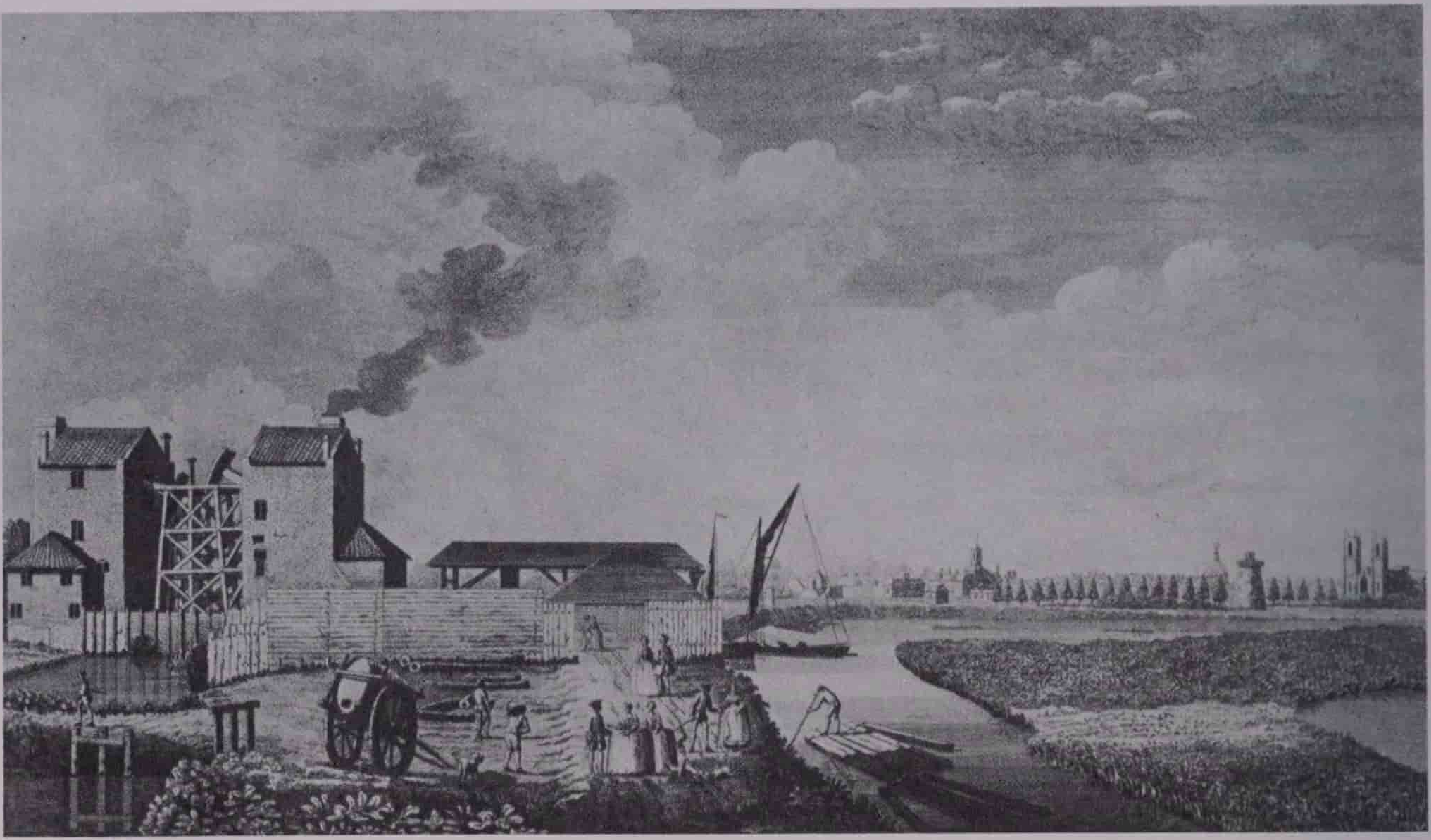
40. *Shepherds Well at the junction of today's Fitzjohn's Avenue and Akenside Road, Hampstead. Until recently it was marked by a fountain but, due to vandalism, this has been replaced by a plaque.*



41. *This stone, drawn by Sydney Arrobus, is set into a wall on the east side of Marylebone Lane.*

Hertfordshire. He had to contend with enormous difficulties from recalcitrant landowners and political opponents, and had nearly exhausted his capital when he was rescued by no less a power than King James I, who offered to go halves in the total costs in return for a half-share in all the profits. The New River followed a winding course of just under forty miles, clinging to the contours like a Dartmoor leat, to the New River Head, near King's Cross Road, whence it was distributed in wooden pipes. Much of the water was obtained from streams tapped on the way: one of these was Hackney Brook. It has since been straightened and shortened so that it now ends at the Stoke Newington Waterworks:[13] some of the remnant is still visible as ornamental waters in Canonbury and Islington. A proposal was made to take a tenth part of the water of the Wandle to London in pipes at the same time as the New River was constructed, but it was defeated following a petition, largely because of the importance of the stream to millers.

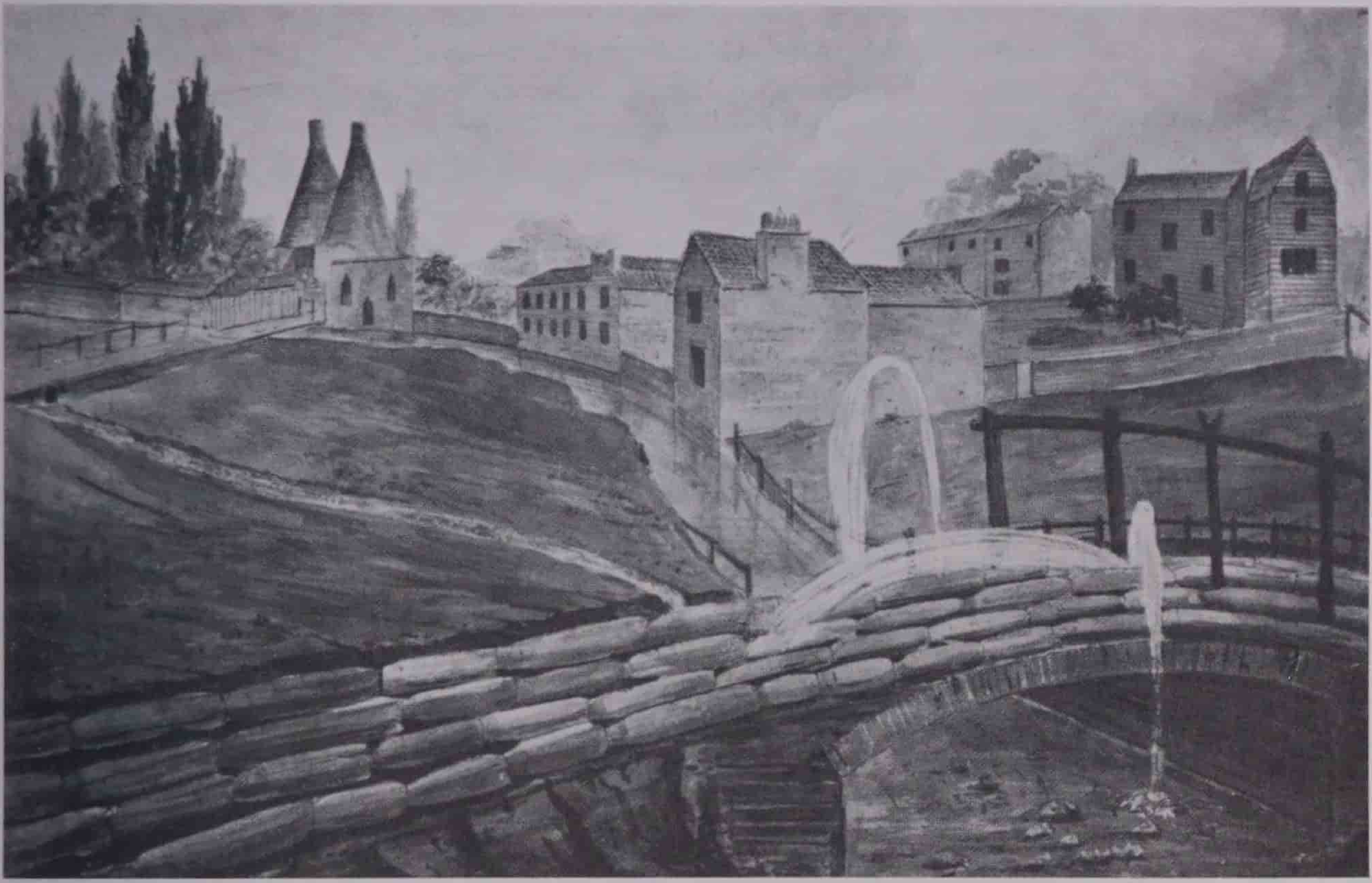
In the two hundred years following, seven other private water companies were created, of which we shall consider two. The Chelsea Waterworks,[14] founded in 1724, had a curiously-shaped reservoir (on the site now occupied by Victoria station) which in 1739–40 froze over and brought the Company into debt: 2,000 subscribers had to be added. The water was obtained partly from the Thames and partly from the Westbourne, and passed through a series of channels in which the sediment was deposited. Ill. 42 shows the improved model of Newcomen's engine which was used to pump the water. This was one of the sights of London, as is apparent from the following description of 1755,[15] which shows the wonder of mechanical devices to people who are not yet blasé about them.'A short distance from hence [Ranelagh] is Chelsea Water Works, a noble cut, being a large, though not long, river itself, from the Thames to near Buckingham



42. A view of Chelsea Water Works, 1752, showing logs being floated up the reservoir to be bored for use as water-pipes, and the steam engine for pumping water. The smoke from this used to blow towards Buckingham Palace, seen in the background at the left of the line of trees.

Garden wall, where is a curious water-engine that works by means of steam arising from water boiling in a great copper, a continual fire being kept for that purpose. The steam being compressed and condensed, moves by its evaporation and strikes a great counterpoise, which striking another at last moves a great beam, which by its long motion, draws water from the river, which mounts through iron pipes, and discharges itself into a deep cistern over the machine, and thence falling down through other iron pipes, is conveyed by large wooden pipes to the bason or reservoir in Hyde Park from which it supplies the upper part of the new buildings.' (This reservoir was a circular one near the Mount Street Gate;[16] there was, as we have seen, also a reservoir in St James's Park.) The inhabitants of Buckingham Palace did not appreciate the machine as much as the writer quoted above: they found its smoke a constant nuisance.

The wooden water-pipes mentioned were merely hollowed tree trunks, butted end to end and joined by iron unions. Ill. 42 shows logs being floated up to be used in this way, and also others which have already been bored. These wooden pipes (of which specimens may be seen in the Museum of London) leaked so badly that about a quarter of the water was lost: in 1746 the Chelsea Company introduced the first iron main in London, but the New River Company was still using wooden ones about 1800 (Ill. 43). The Chelsea Company also pioneered slow sand filtration for purification – this was in 1829. About twenty years later the company moved farther up the Thames



43. Leaking wooden water-pipes, belonging to the New River Company, crossing the Fleet at Clerkenwell.

and most of the reservoir was filled in, but the lowest part still exists, as the Grosvenor Canal, and is used by the City of Westminster as a wharf for loading rubbish on to barges from which it is later dumped on to the Essex marshes.

The South London Waterworks was founded in 1805, and used water from the Thames and Vauxhall Creek. Water was supplied from 1807, but in the same year the engine-house and a wooden reservoir were destroyed by fire. In 1822 two steam engines were in use, but they were inadequate because the site was too low, and a new 45 h.p. engine was installed. A few years later the quantity of the water began to be affected by the demolition of Old London Bridge[17] and the quality by the accumulation of rubbish in Vauxhall Creek. The latter was returned to the jurisdiction of the Surrey Commissioners of Sewers, and a tunnel was laid to bring water directly from the bed of the Thames: also, filter beds were built, which were so effective 'as to render the water transparent'.[18] The famous gasholder beside the Oval stands of the site of one of the circular reservoirs.

In the mid-nineteenth century, the upper parts of streams were still providing a wholesome water-supply (Ill. 40), but that supplied by the eight companies was contaminated by sewage and thoroughly dangerous. The great pioneer of public health, Sir Edwin Chadwick, attacked it fiercely: 'he could not believe that the supply of so essential a commodity as pure water ought to be governed by considerations of profit, and he said so in no uncertain terms.'[19] However, vested interests and public apathy were too strong, and it was not until 1903 that the companies were merged into the Metropolitan Water Board, whose successor, Thames Water, for the time being still has its headquarters at the old New River Head, where Myddelton Square commemorates the creator of the New River. Today, Thames Water takes 70% of its supply from the Thames *above* the town (there are thousands of acres of reservoirs around Staines and Walton) and from the Lea, and 30% from ground water sources.

The rivers have also been used to supply water for animals. Bayswater was formerly Baynard's watering-place (from the Westbourne) and the point where the Old Kent Road crossed the Earl's Sluice was known as St Thomas's watering-place. This was the first stop of travellers to Canterbury, and it was here that Chaucer's pilgrims began to listen to their first Tale:

> And forth we riden, a litel more than pas
> Un-to the watering of Seint Thomas.

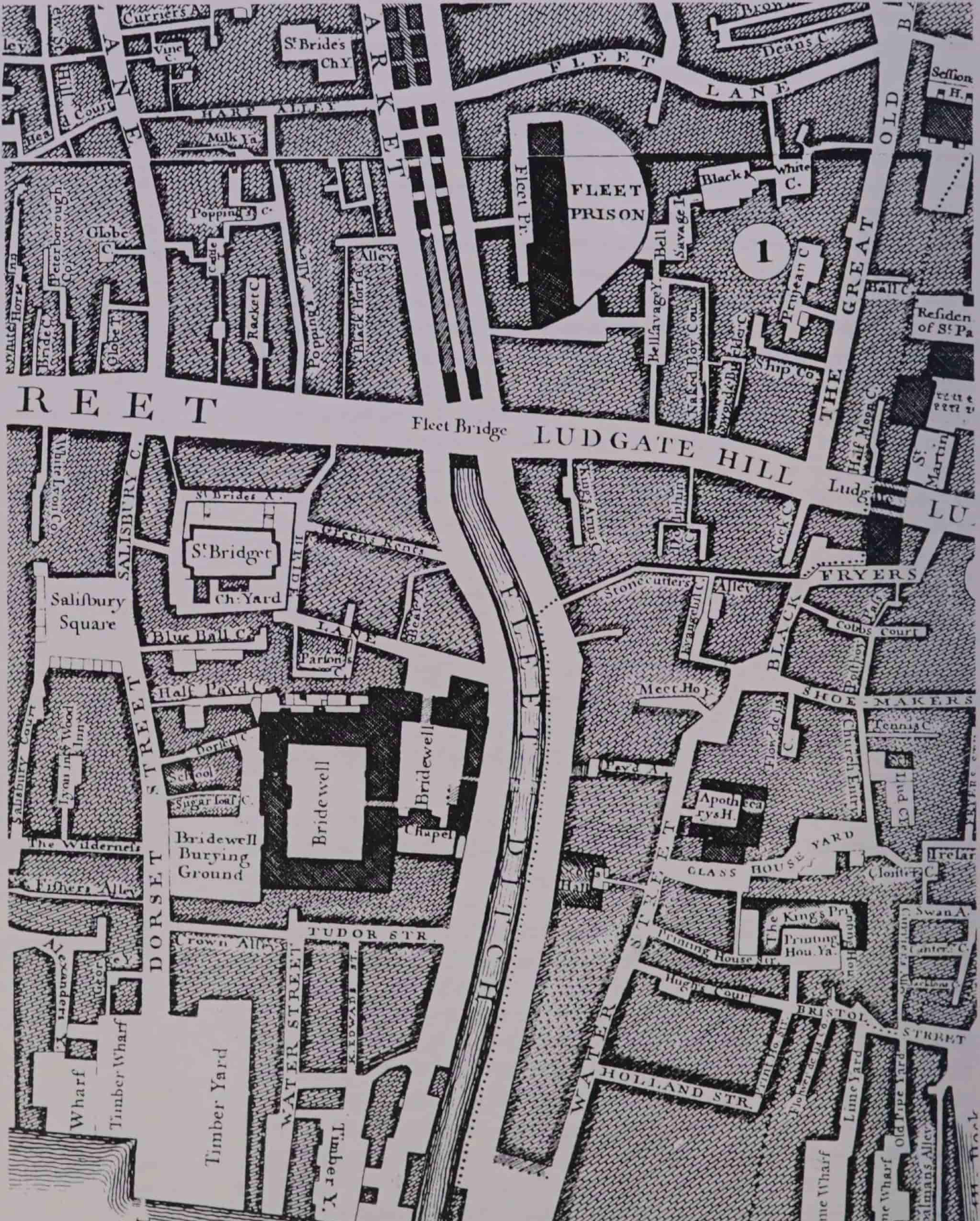
There are paintings in the Crace collection showing the same use being made of the Tyburn at Wellin's Farm in 1789[20] and the Effra at Brixton in 1813.[21] Waller could himself remember seeing cows drinking from the Fleet at Kentish Town. A pleasing demonstration of the antiquity of this use of the river by animals was afforded by the discovery of the bones of a hippopotamus (literally 'river-horse') at Coulsdon, Surrey, in a valley almost certainly occupied in prehistoric times by the upper reaches of the Wandle.

3. Shipping

Although the Walbrook was not really a navigable stream its mouth (Dowgate) was used as a harbour even in Roman times. This is evident from the discovery in it of nautical equipment such as shackles, and tools connected with unloading such as pitchforks and packing-case openers, all of Roman date: these may be seen in the Museum of London. A charter of Henry II confirms the citizens of Rouen in possession of their port at Dowgate, as they had held it from the days of Edward the Confessor,[22] with the right to set adrift any other ship found moored there without responsibility for the damage she might receive. It appears that even in Ethelred's time they had traded to London with French wine and 'Craspice' (variously interpreted as sturgeon, porpoise or whale). London was first built up into a major port by Florentines and Lombards, who dealt mainly in wool. They were succeeded by the Hanseatic League, with a more general trade including much grain: their headquarters, the Steelyard, was just east of Dowgate, which they probably used for their vessels. There were three other deep-water harbours in London: Billingsgate, Queenhithe and Bridewell. The last was the mouth of the Fleet and will be considered next.[23]

The earliest recorded cargo on the Fleet is stones for the building of Old St Paul's, some time between 1110 and 1133, the earlier Saxon cathedral having been burnt down in 1087. In the reign of John, the Knights Hospitallers had a wharf (at what is now Fleet Lane) which they allowed to be used by their neighbours of St Bartholomew's Hospital for the 28 quarters of corn and 4 cartloads of hay, brought each year from Rainham in Essex. Both ships and sailors were hired. Patients, also, if they were too ill to walk, were brought to the hospital by water rather than through the crowded city.[24] The Abbot of Faversham had a wharf at Bridewell from which boats carried his heavy luggage across the Thames, thus avoiding the narrow streets and London Bridge: he had previously been at Bermondsey Abbey, so was no stranger to water-borne traffic. Later he was involved in a lawsuit with the Knights Templars for interfering with his access to his wharf, and feeling ran so high that the Lord Mayor removed with his own hands a gate that the Templars had built. In the fourteenth century we hear of the carriage on the Fleet of corn, wine, firewood and other necessities (1307), and of wine for the Fleet Prison (1355),[25] of a sort of black-market traffic in Welsh cheeses (1377),[26] and of an enterprising 'merchant stranger' who brought a shipful of paving-stones up to Fleet Bridge and offered them for sale at seven shillings the load (1341).

In 1418 two boats of twenty tons each were carrying paving-stones up to Holborn, and at the same period boats carrying rushes for covering floors were often seen on the Fleet. The rushboats were confiscated soon afterwards because they would not stop littering the wharves with their rushes. The river gradually choked up with silt and rubbish until, in 1502, it was thoroughly scoured out 'so that boats with fish and fewel were rowed to Fleete bridge, and to Oldborne Bridge, as they of old time had been accustomed, which was a great commodity to all the inhabitants of that part of the city'.[27] Another record of the same year speaks of 'oysters, herrings, and other victuals'. (This may be the source of the oysters found in excavations in 1959 for the new telephone exchange in Farringdon Street: on the other hand they may have come up on the tide from Fleet Bridge, on which they were being sold by barrow-boys in 1699.) A survey of lands belonging to the Worshipful Company of Clothmakers in 1612 marks 'Davy Ioanes Wharf' on the east bank below Fleet Bridge, but this is not the gentleman with the locker, since that expression is

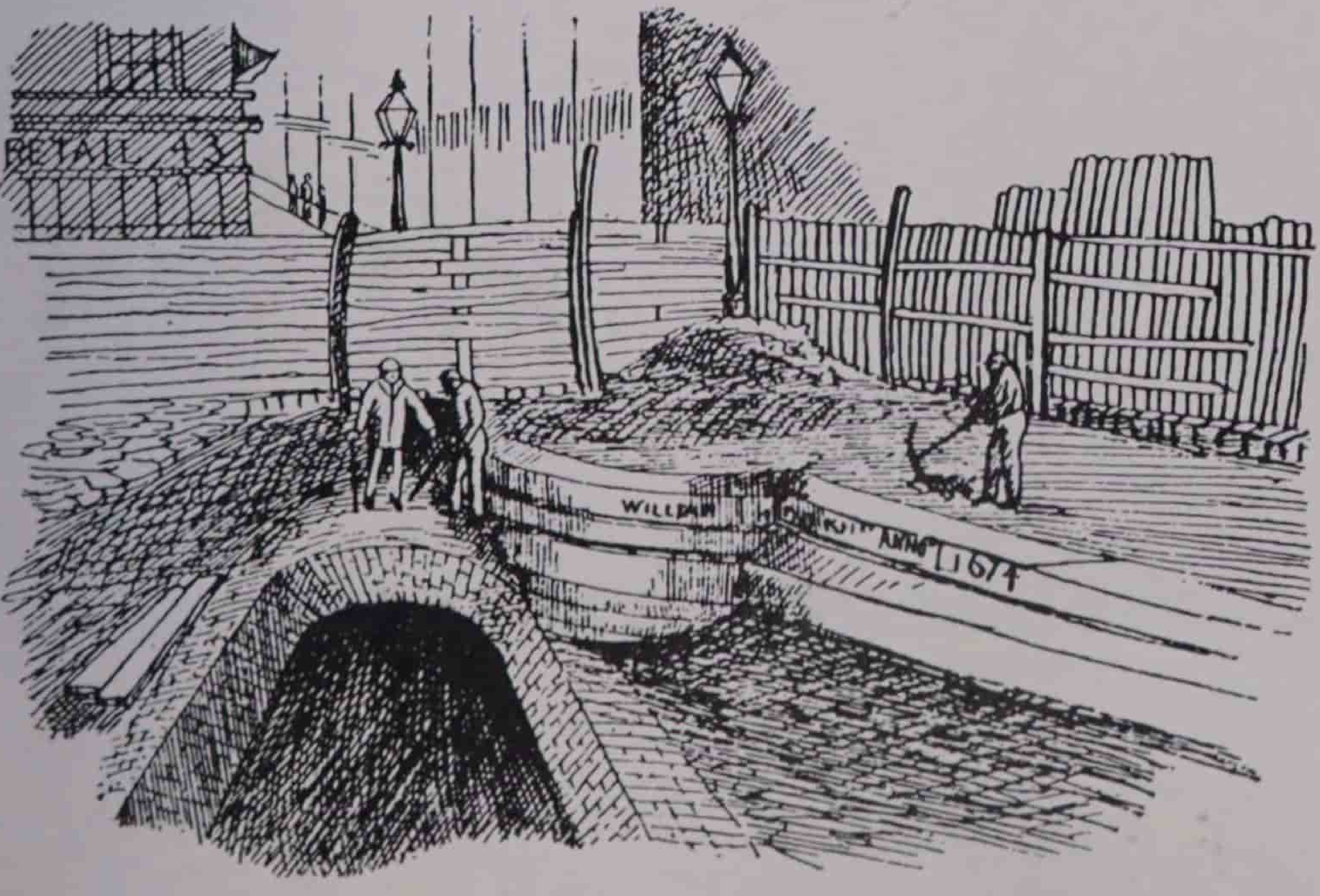

Curriers A.
Vine C.
St. Bride's Ch. Y.
MARKET
FLEET LANE
Deans C.
Sessions H.
OLD
Harp Alley
Milk Ya.
Fleet Pr.
FLEET PRISON
Black A.
White C.
Bell Savage
Savage I.
1
Poppings C.
Globe C.
Peterborough Co.
Racket C.
Poppings Alley
Black Horse Alley
Bellsavage Y.
Naked Boy Cou.
Ship Co.
THE GREAT
Ball C.
Residen. of St. Pa
REET
Fleet Bridge
LUDGATE HILL
Half Moon C.
St. Martin
Ludg.
LU.
White Lyon Co.
SALISBURY C.
St. Brides A.
St. Bridget
Ch. Yard
BRIDE LANE
Green Rents
Salisbury Square
Blue Ball C.
Parsons
Stonecutters Alley
FRYERS
BLACK
Cobbs Court
FLEET DITCH
Meet Ho.
SHOE MAKERS
Tennis C.
Half Pav'd C.
School
Sugar loaf C.
Bridewell
Chapel
Apothecarys H.
Bridewell Burying Ground
Salisbury Court
Lyon in the Wood Inn
The Wilderness
Fishers Alley
DORSET STREET
GLASS HOUSE YARD
Cloister C.
Irelan
Swan A.
Crown Alley
TUDOR STR.
The Kings Pri.
Printing Hou. Ya.
Printing House Str.
Hughs Court
BRISTOL STREET
Canter C.
Alexanders
WATER STREET
HOLLAND STR.
Wharf
Timber Wharf
Timber Yard
Timber Y.
Lime Wharf
Lime Yard
Old Pipe Yard
Coalmans Alley
Dorset Stairs

MAP 9. *The Fleet Canal as shown on Rocque's map of c. 1745.*

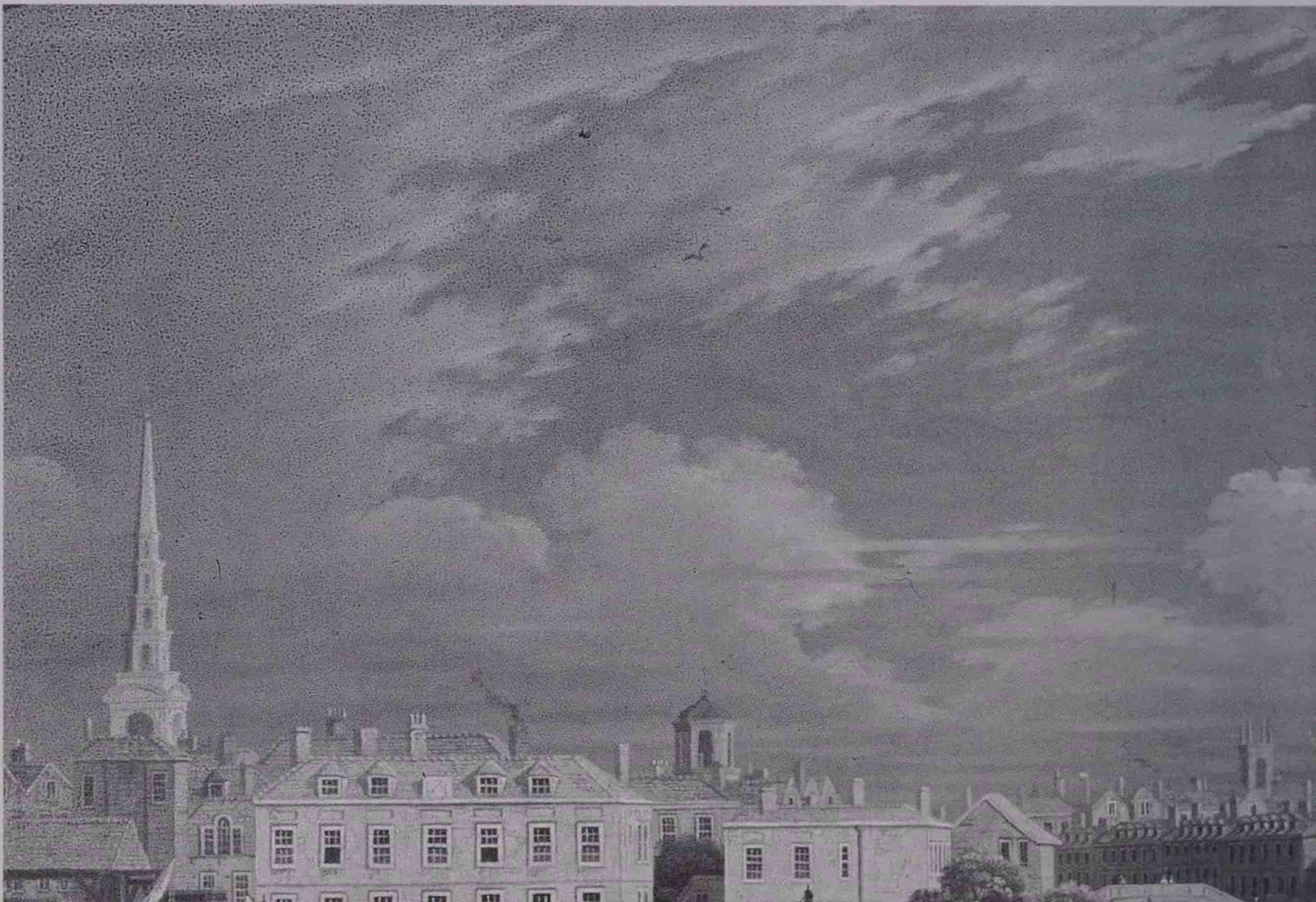
believed to be a corrupt reference to Jonah. However, the river was again deteriorating; in 1606 it was cleaned once more, and yet again in 1652, having become impassable for boats 'by reason of the many encroachments thereon made, by the throwing in of offal and other garbage by butchers, saucemen, and others, and by reason of the many houses of office standing over upon it'. But in spite of this, in 1661 Lord Hatton was allowed to make his new sewer fall into the stream.

After the Great Fire it was resolved to convert a squalid nuisance into a beautiful asset. Under the direction of Wren and Hooke[28] the lower 2,100 feet of the Fleet was deepened and widened, and an elegant canal created, 50 feet wide, lined on either side by wharves 30 feet wide (see Ill. 45). It was crossed by high bridges with (not to waste space) storage vaults under the ramps which led up to them. Wren designed a new Holborn bridge as a fitting northern end to the canal: part of this, bearing the name of the Lord Mayor at the time of its completion, was unearthed in altering the Fleet Sewer in 1840 (Ill. 44).[29]

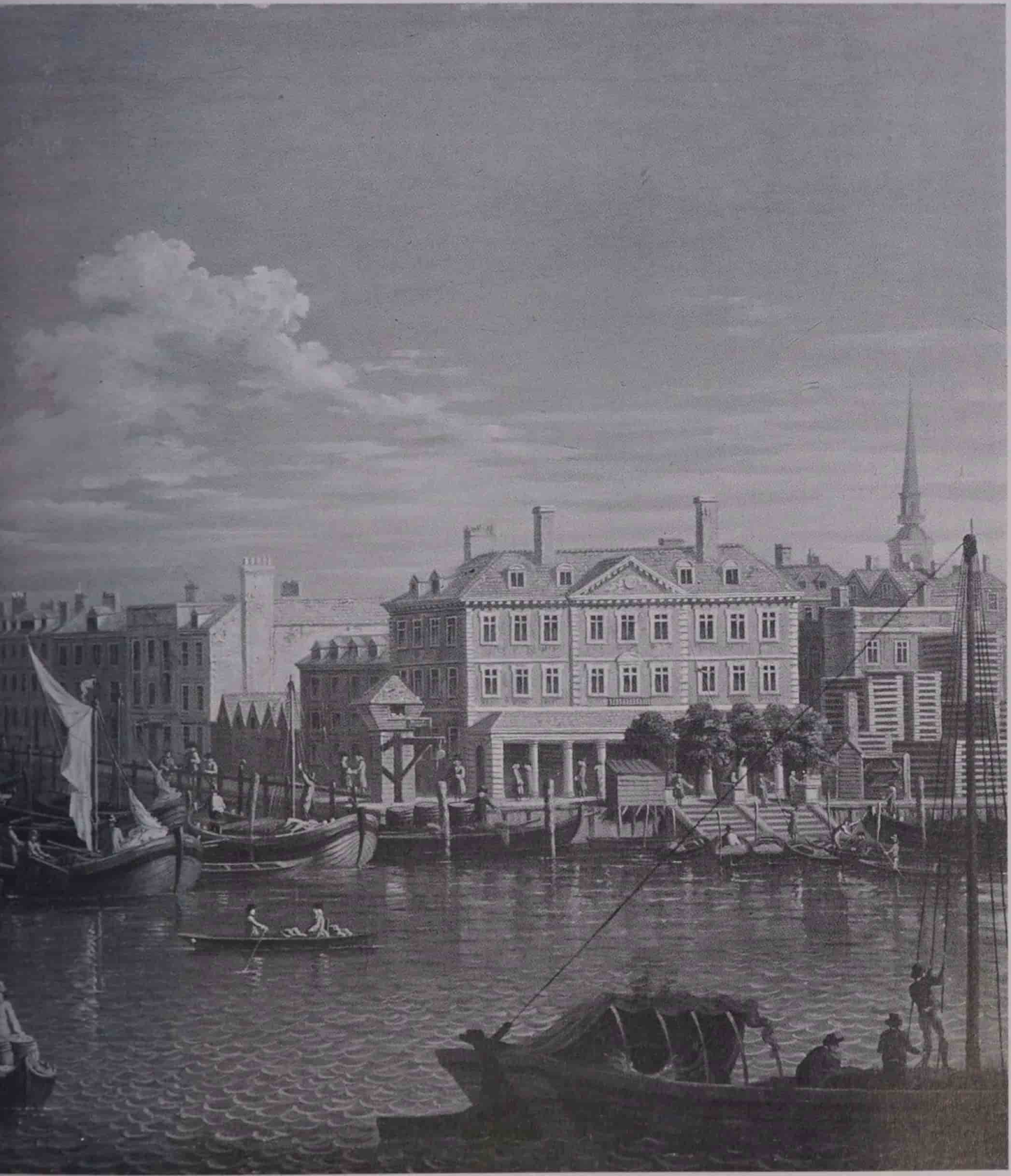
The work was carried out very conscientiously by the contractor, Thomas Fitch,[30] under the close and personal supervision of Wren. They had to contend with enormous difficulties: the river kept silting up again as fast as they dredged it, the local citizens would not discontinue their practice of dumping rubbish in it, their workmen were press-ganged into the navy to fight the Dutch, and they were often short of money. They tried to stop the silting by a grating 15 feet high at Holborn Bridge, but first it broke and then it choked up, so that the water accumulated behind and cascaded over the top.



44. End of Wren's Holborn bridge from the south, and part of Holborn Hill, revealed in excavations, 2 June 1840.



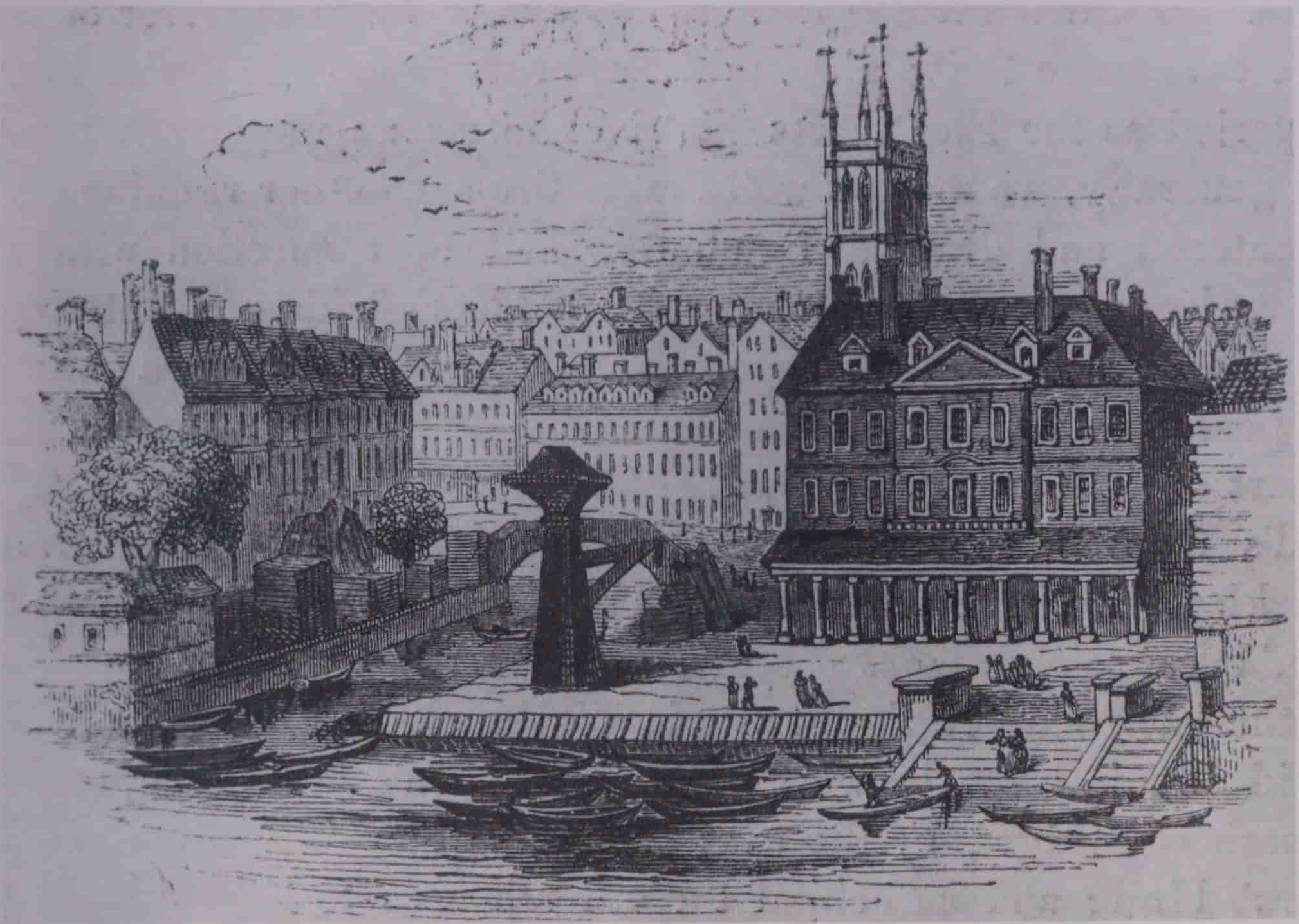
45. Entrance to the Fleet River. Painting by Samuel Scott (c1702–72).

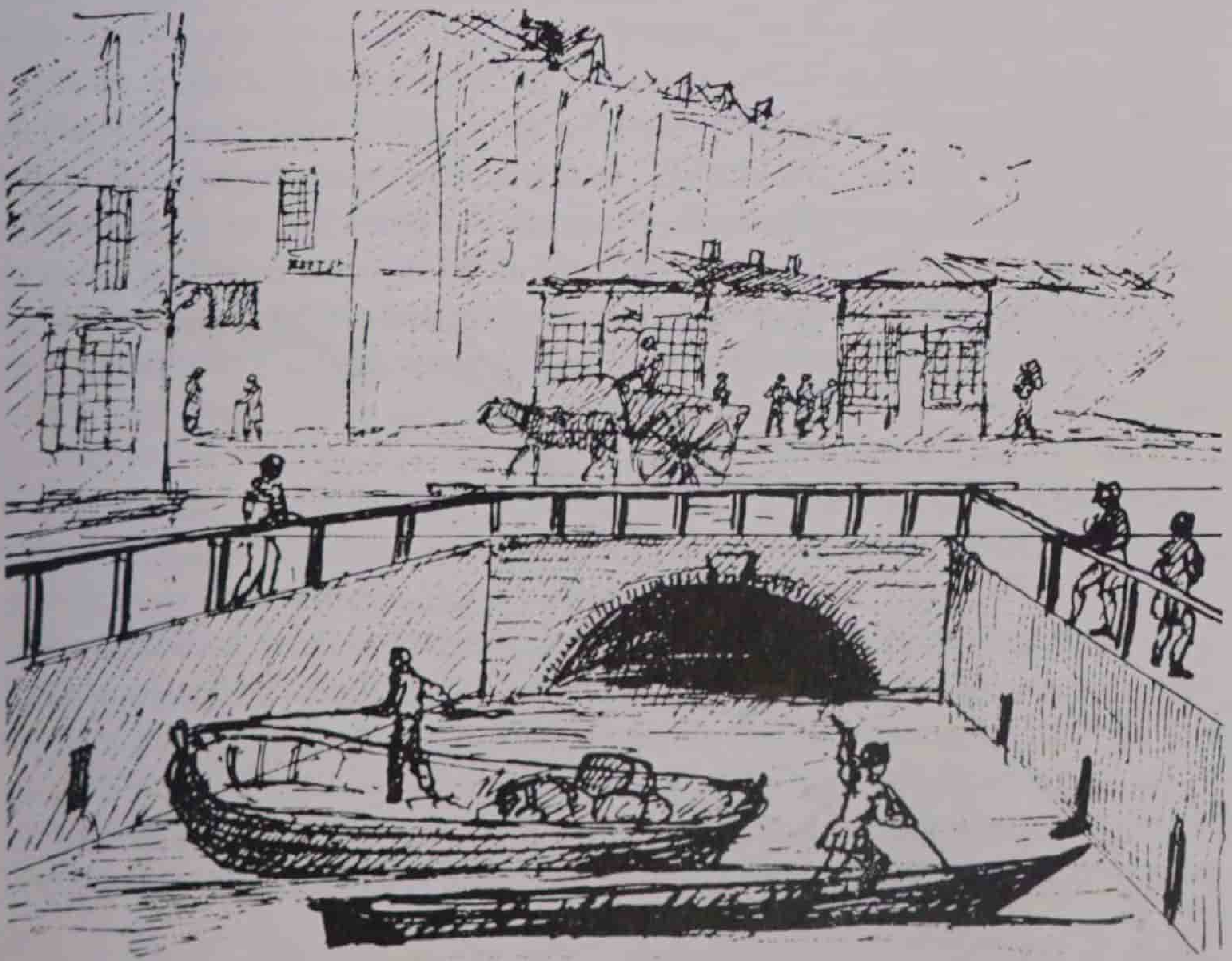


Opposite page:
46. The mouth of the Fleet river, 1749. To the left is the wharf of the New River Company, and Bridewell Bridge which once connected Bridewell Palace to Blackfriars; the open space in front of Mr Salmon's mansion is a wharf owned by the City of London.

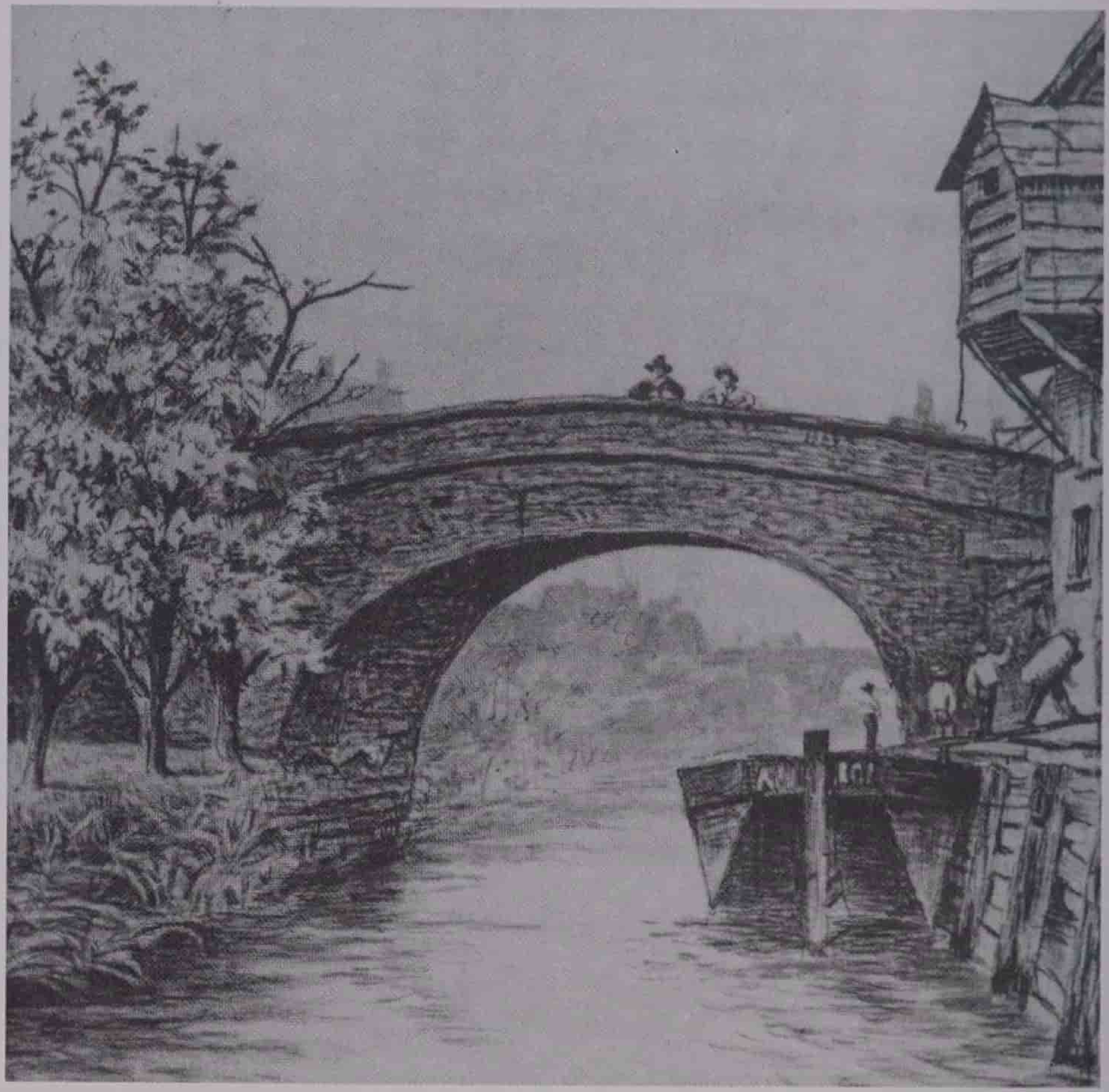
Their efforts were quite unappreciated by their contemporaries: Ned Ward inquired of a friend 'what great Advantages this costly Brook contributed to the town, to Countervail the Expence of Seventy four thousand Pounds, which I read in a very Credible Author, was the charge of its making. He told me he was wholly unaquainted with any, unless it was now and then to bring up a few Chaldrons of Coles[31] to two or three Pedling Fewel-Marchants', and that the cellar-warehouses were so damp as to be useless 'except to Frogs, toads, and other vermin'. This was unduly harsh: it had only cost £50,000 and boats did use it, as may be seen from Ill. 45 and from the map of Ogilby and Morgan, which shows many boats in the canal. In 1703 'great quantities of corn' were being brought by river to a corn-dealer's above Fleet Bridge. Nevertheless in none of the first three years did the revenues reach £60 per annum, and the canal was therefore farmed out to one Jervis James, described as 'gentleman' but evidently not, since, finding that he was losing money, he abandoned his responsibilities for maintenance and the river was allowed to deteriorate again. The trouble was that there was not enough demand for a canal and too much demand for a street. Thus the wharves became thoroughfares and, space being so precious in the crowded city, were also used as coach-parks, storage-places and rubbish dumps. In 1733, only ten years after Wren's death, the authorities bowed to the inevitable and the canal was arched over down to Fleet Bridge: the wharves became roads and the central strip a long arcaded covered market (Ill. 47). The remainder of the canal was covered over in 1766, and in 1829 the market was demolished and the present wide Farringdon Street created. Trench and Hillman reproduce a deposition obtained by Crosby from one, Thomas Calladine, then 95 years old, describing Fleet Bridge, which he 'well remembered...having often gone over it when a young man'. It was a stone bridge of one arch, with a wooden parapet and is shown in a drawing which was presumably approved by him.

A knowledge of this venture might have prevented the curiously similar story of the Kensington Canal. This consisted of the lower two miles of the Counter's Creek made into a canal 100 feet wide and able to carry vessels of 100 tons burden. It was opened in 1828 by Lord Kensington 'who, accompanied by a number of friends, embarked in a barge at Battersea Bridge and proceeded up the canal, followed by several craft laden with timber, coal, sand, etc.'[32] to the basin, 200 by 400 feet, which ended the canal just south of Counter's Bridge. It cost £40,000 to build, but the earnings from wharves, tonnage, etc., were estimated at £2,500 per annum. In practice, the income was very much less and, after less than twenty years, the canal was bought by the West London Railway Company, who drained it and built an extension of their line in it. (This was quite a common practice since





47. The Fleet Bridge at Fleet Street. Fleet Street is on the left with the single-storey stalls of the Fleet Market in the background. Based on a manuscript deposition dated 1839 (in the Crosby Collection) by a man of ninety-six who could remember using the bridge as a young apprentice.



48. Kensington Canal where it is crossed by the King's Road. Pen and wash drawing by Walter Greaves.

the ground thus acquired was not built upon and was level: the line from Croydon to Rotherhithe is built in the bed of the old Croydon Canal, which joined the Grand Surrey Canal, and the lock-keeper's cottage can still be seen from the train at Brockley. The bridge over the railway at Sydenham is the old canal bridge, somewhat strengthened.) The West London Railway was in fact never a success at all until this extension was built and the line carried across the Thames to Battersea.'Thus was conceived that prodigious phenomenon known to this day as Clapham Junction.'[33]

On the south side of the Thames, it is said that Canute sailed up the Effra to Brixton, and that Queen Elizabeth did the same when visiting Sir Walter Raleigh. These stories, though usually derided, are not as improbable as they sound, and are supported by the unquestionable fact that in 1664 Lord Loughborough, who had been a distinguished Royalist commander in the Civil War and now held the manor of Water Lambeth or Lambeth Wick, obtained a private Act of Parliament to make a navigable canal of the Effra from near Brixton Causeway to the Thames.[34] He was, however, 78 years old at that time, and his health does not seem to have lasted long enough for him to carry the project through. A further confirmation of the stream's navigability is afforded by the statement of a gardener, described in 1895 as 'recently deceased', that he had 'often seen the Effra in Lawn Lane [beside Vauxhall Park] assume the proportions of a river, wide and deep enough to bear large barges'.[35]

Canute is also said to have dug a trench by which his boats were able to get above London Bridge without passing under it, and Maitland claimed to have traced out the course of this trench across South London. Besant poured scorn on this, showing by geometry that for an average-sized Danish ship 'any canal formed in parallel circles of radii 64 and 80 feet, and deepest in the centre, would be enough for the purpose'. We may concede that they would only do a minimum of digging, but surely it would be impossible to dig less than 30 yards away from a strongly held enemy position. Maitland's course, though at first sight long and intricate, in fact only requires the digging of communications between the pre-existing natural water-courses which have already been described. His route went up the Earl's Sluice, across the Old Kent Road south-east of the Lock Hospital, then via the Lock stream to Newington Butts, passing south of the Elephant and Castle and 'continuing its course by the Black Prince in Lambeth Road it runs west-and-by-south, through the Spring Garden at Vauxhall' into the Effra.

The mouth of the Ravensbourne forms Deptford Creek, which was a major centre for shipping for over four hundred years. Its importance began when Henry VIII founded a Royal Dockyard there: later this spread upstream along the south bank of the Thames as far as the outfall of the Earl's Sluice.[36] A record of ships in 1521 says 'the *John Baptist* and *Barbara*, every one of them being of the portage of 400 tons, do ryde together in a creke of Deptford Parish'. The dockyard was visited by Edward VI and, on a famous occasion, by Queen Elizabeth I, who came to visit Captain Drake aboard the *Golden Hind*, in which he had just sailed round the world. Here, on board his much-travelled ship, now riding at anchor in Deptford Creek, she knighted Drake and dined with him in his cabin. A tremendous crowd assembled to see her and a hundred of them, packed on to a little wooden bridge, collapsed with it into the water, but without loss of life. When the *Golden Hind* later became unfit for service, the Queen commanded that it should be kept in Deptford Creek 'as a memorial of national honour and imperial enterprise'. The cabin was converted into a banqueting-house,[37] and the ship remained there for many years until it finally fell to bits 'when all that remained sound of her was converted into a chair, which was presented to the University of Oxford and is still kept in the Bodleian Library'.[38] It is also claimed that the small table below the dais in Middle Temple Hall, which is perversely called 'the Cupboard', is also made from timbers from Drake's ship.

In the next century, Deptford Creek was visited by the two great diarists Pepys and Evelyn: the former in his capacity as Secretary to the Admiralty, and the latter because he had in 1651 moved to a country house called Sayes Court there, to be at a safer distance from the events of the Civil War. Evelyn records a typical instance of the awakening interest in scientific experiment so characteristic of the period:[39] 'July 19th, 1661....We tried our Diving-Bell or Engine in the water-dock at Deptford, in which our Curator continu'd half-an-hour under water; it was made of cast lead let down with a strong cable.' The appearance of Deptford Creek at this time is shown in a painting by Samuel Scott ('London's Canaletto') in the Tate Gallery.[40]

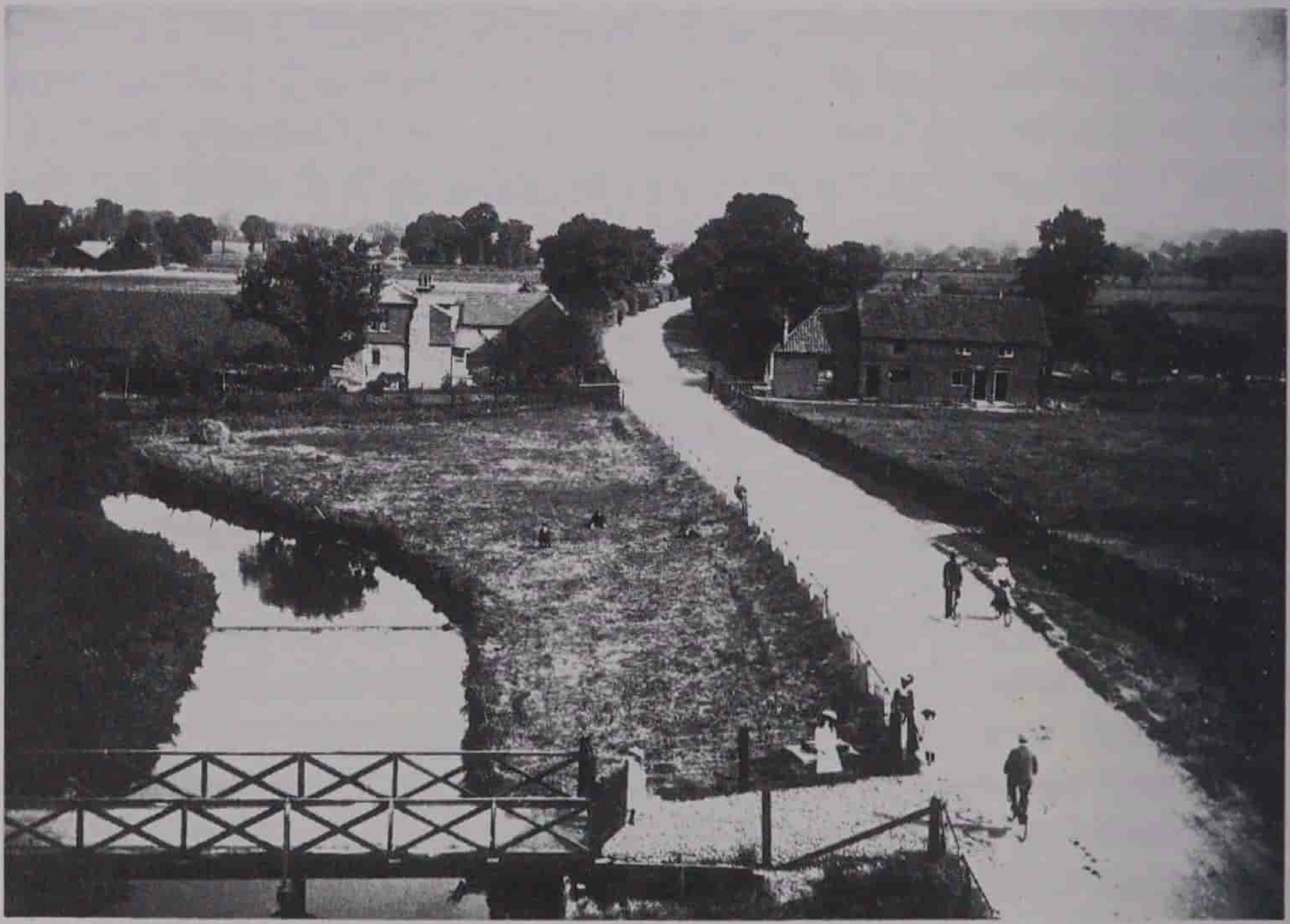
In 1694 Evelyn let his house to Captain (later Admiral) Benbow, who proved a very unsatisfactory tenant. When, therefore, it became known that no less a person than Peter, Czar of all the Russias (afterwards known as Peter the Great), was coming to Deptford to study naval architecture, the house was redecorated and made available to him. Peter spent three months there, working diligently in the dockyard with the ships' carpenters. The evenings, however, he spent (in his own words) 'making merry' with his friends, and as this usually meant drinking through the night he turned out to be an even worse tenant than Benbow. When Evelyn returned to his house he found the furniture broken, the walls and floors bespattered with grease and ink, the curtains, quilts, and bed linen 'tore in pieces', and the pictures riddled with holes as a result of being used for target practice. The lawn, of which Evelyn was particularly proud, was utterly ruined and looked as if a regiment of soldiers in iron shoes had drilled on it. Sir Christopher Wren, who was asked to draw up a report of the damage, to submit to the government, assessed the cost of repair at £350.[41]

A hundred years later Deptford was still the 'navy-building town' (as Pope had called it): here Captain Cook had his two ships *Resolution* and *Discovery* fitted out before his last voyage to the Pacific in 1776. The dockyard was finally closed in 1869, and replaced by a cattle market. Evelyn's gardens are now a recreation ground, and the adjoining Czar Street commemorates the man who so misused them. But even today, when the years of its glory have long departed, the ships using Deptford Creek take precedence over the far more important Southern Electric trains which cross the creek on their way from London Bridge to Greenwich.'By an act of 1829 [actually 1833], whenever a ship needs to pass up the creek, the bridge across it, which is in principle like a miniature Tower Bridge, has to be lifted. The train-load of city gents sits and waits while twenty men work by hand the ancient winding gear. Not long ago, a station master refused to allow the bridge to be lifted until the train had passed. A shipping company claimed that he had breached the Act: rail must give way to sail.'[42]

Tugs and barges also use the mouths of some other southern tributaries of the Thames, especially the Neckinger (see Ills 25 and 26), the Falcon and the Wandle. The value of the last as a harbour is shown by the route of the Surrey Iron Railway, authorised by Act of Parliament in 1801, which was to run from Wandsworth, as a port, to Portsmouth. In fact it never got any farther south than Merstham, near Redhill, and thus lay almost entirely in the Wandle valley.'The rails were so made that anyone could, for a small fee, use them for his own carts, and it was thought that the scheme would be a boon to traders. It was an original and bold one and yet, though it was in work for several years, it never really paid. The trucks were drawn by horses and mules, and carried chalk, stone and, probably, other materials, to the "port" of Wandsworth.'[43] The fact that the railway started at Wandsworth suggests, of course, that the Wandle was not navigable for very far up, and this is what one would expect from the stream's fairly steep fall of 14 feet per mile.[44]

The more peripheral rivers north of the Thames have been on the whole the most successful as navigable waterways. The Lea, in particular, has a very distinguished history in this respect: it is even possible that the Romans used it as a route to Verulamium, and that this was one reason why they chose London as the site for the new capital.[45] Certainly Alfred pursued the Danes up it in 896,[46] and 'the first known English example of money borrowed by a statutory body for a public work is an Act of 1430, setting up commissioners with power to borrow in order to remove obstructions from the Lea, as there were so many "shelfs" in the river from Ware to London that boats could not pass along it. The commissioners were permitted to charge 4*d*. for each freighted boat for three years. A complaint of 1448 against the Bishop of London, for allowing too much water to pass through the sluice at his water-mill at Hackney, recited: "There is in Middlesex a water called le Ley, running from Tottenham to the Thames, by which ships and boats have been accustomed from time immemorial to go from the City of London to the said village of Tottenham and elsewhere with various goods." "Time immemorial" is a doubtful indication, but it must at least imply water-borne trade to Tottenham in the fourteenth century.' These piecemeal improvements provided no lasting benefit, and the counties of Middlesex, Essex and Hertfordshire between them constructed a new cut, or navigable canal, which was complete by 1581 and included, at Waltham, one of the earliest pound locks in England.[47] 'A chorus of complaint arose against these innovations; Enfield took a large part, protesting about the damage done to its carrying trade for grain, malt, and provisions, which now went throughout by water instead of being landed there. Burnings of the locks, violence to the lock-keepers, and damage to the banks ensued. Improvements went on, against resistance, through the seventeenth century, and during the eighteenth the river-head was carried up to Hertford.'[48] The Lea River Navigation today is an elaborate network of canals still used, despite the advent of the railway and motorway, as a cheap method of transport for raw materials of great weight or bulk.

The Stamford Brook had 'quite a respectable estuary used by barges and smaller craft for a mile or more'.[49] The lower three miles of the Brent were canalised, and in a few places straightened, between 1793 and 1798 to form the first part of of the Grand Junction Canal. At Greenford the canal leaves the Brent and runs westwards to the Colne, which it then follows as far as Watford. This canal contributed much to the growth of Uxbridge, where corn-mills flourished, 'and it gave a strong impetus to the development of brickfields about Isleworth and Heston. In 1829 its shares paid 13 per cent. But eight years later it delivered the Great Western Railway's first locomotive at West Drayton, and it settled down to a less dazzling prosperity'.[50]



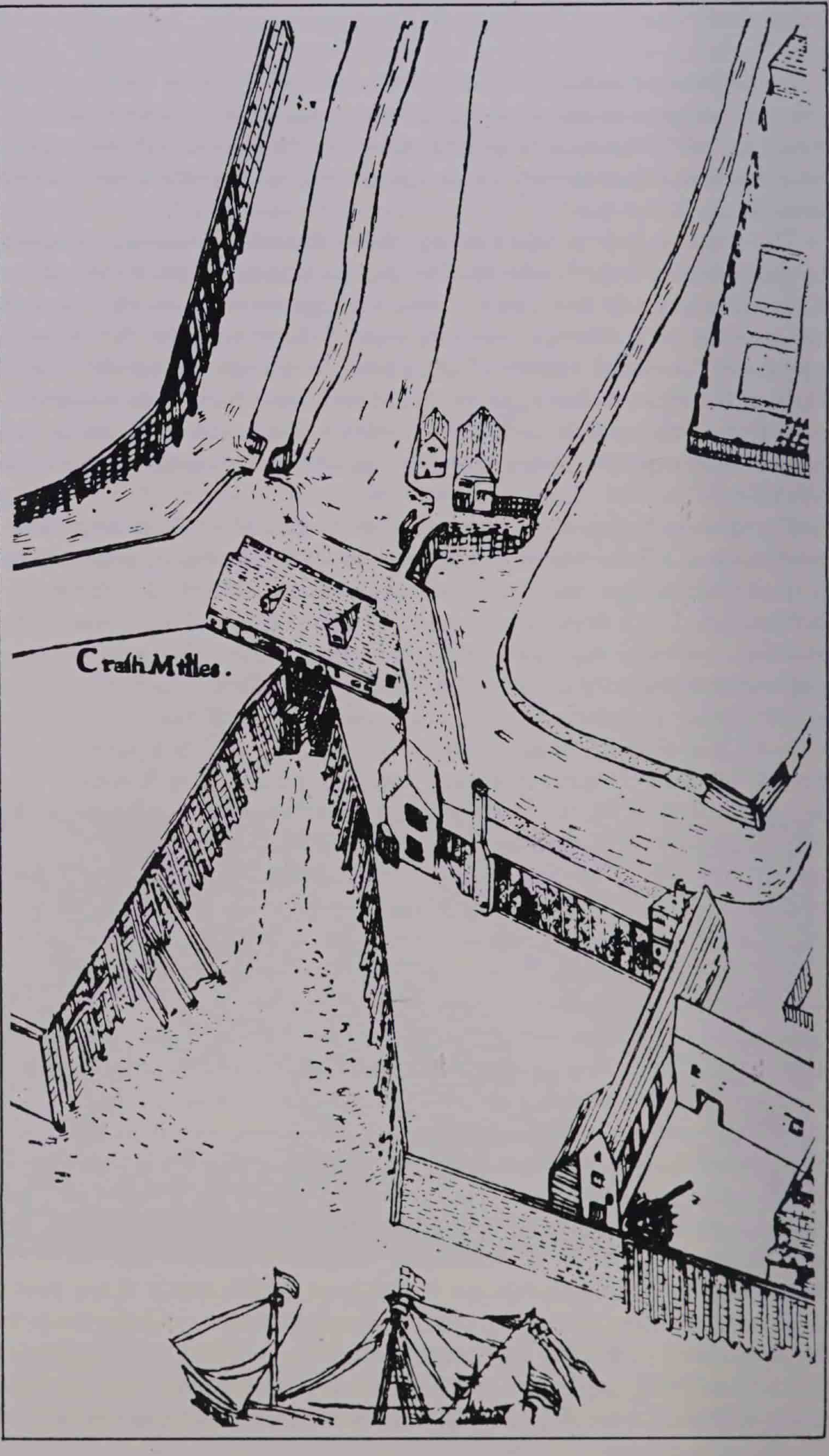
49. The lower reaches of the Brent river. Ruislip Road is to the right. The old parish of Greenford was on the left bank of the river and that of Ealing on the right. Further south the river joins and becomes part of the Grand Junction Canal.

4. Power

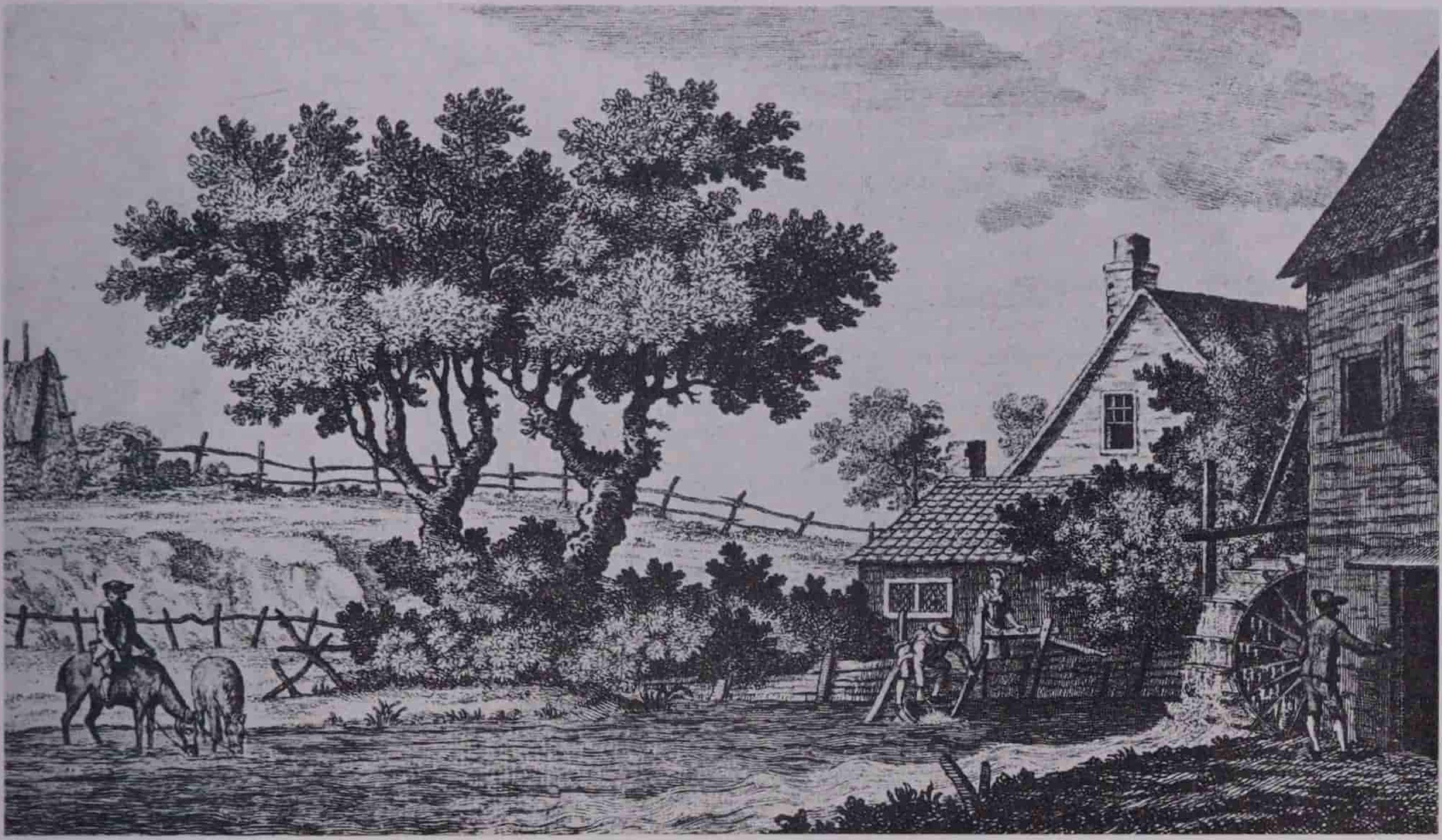
In the present industrialised and nuclear age it is easy to forget that the only sources of power available to our ancestors of a few hundred years ago were the muscle-power of men and beasts and those natural forces which could be very easily harnessed, such as the flow of wind and water.

The streams in and near London were, therefore, extensively used to drive water-mills[51] (see Ill. 51). It may cause surprise that these little tributaries of the Thames had enough force to work a water-wheel, but they all seem to have flowed quite rapidly: Ben Jonson speaks of 'Dowgate torrents falling into the Thames', and the rate of flow of the Fleet at Bagnigge Wells, even after it had been sewerised, was three miles per hour.[52] This – a fair walking pace – is about the speed of flow of the rivers which remain above ground, such as the Wandle.

There was, however, a number of mills which worked on a different system. These stood at the mouths of the streams, where they joined the Thames, and made use of the tides: at high tide the water accumulated in a system of channels behind the mill and, when the tide fell, the water was allowed to flow out at a controlled rate, driving the water-wheel as it did so.[53] Illustration 50 (which is part of the plan of Wapping mentioned on p. 58) shows a typical tide-mill: it was called Crashe Mills, was in existence in 1233, and belonged to the Priory of Holy Trinity, Aldgate. Another monastic mill which was tidal was that of Westminster Abbey, since a lease of 1475 speaks of 'the stream flowing and reflowing from the Mill of the said Monastery to the Totehill'.[54] This was an undershot mill, used for grinding corn and equipped with floodgates to stop the water inundating the levels. After the mill became decrepit in 1678, floods did in fact occur. Another famous tide-mill was that built by the Knights Templars, to whom Henry II granted 'a place in the Fleet next to Castle Baynard, and all the course of water of the Fleet to make a mill'. Taking this literally they put two gates in the mouth of the stream and began to reclaim the land which was later the site of Bridewell. This led, in 1307, to a petition by Henry Lacy, Earl of Lincoln, in which it was set forth 'that the watercourse under Holbourne and Fleet Bridges used to be wide enough to carry ten or twelve ships up to Fleet Bridge, laden with various articles and merchandise, and some of them passed under that bridge to Holbourne Bridge, to cleanse and carry off the filth of the said watercourse which now, by the influx of tan-yards and sundry other matters, troubling the said water, and particularly by the raising of the key and turning off the water that the inhabitants of the Middle Temple [i.e. the Knights Templars] had made to their mills without Castle Baynard, that the said ships cannot get in as they


Crash Milles.

50. *Crashe Mills at Wapping.*

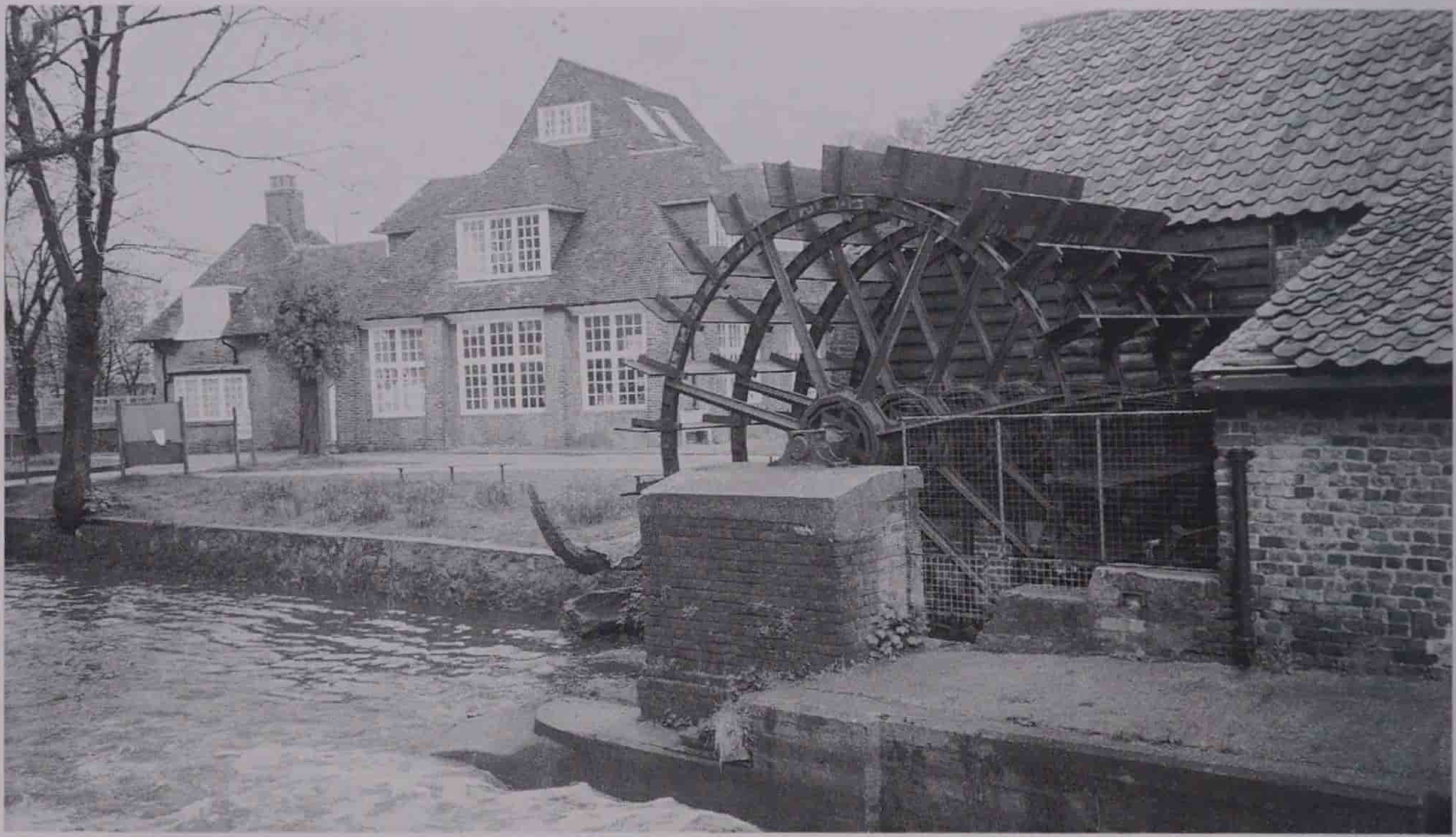


51 'A View of the Water-mill, near Lewisham in Kent'. A view showing the Ravensbourne, 1770.

used and ought to do'. Again the Templars lost their case (cf. p. 87) and the nuisance was abated and the mills later removed.

The majority of the water-mills were used for simple domestic purposes, such as grinding corn and flour for bread. Domesday Book mentions thirteen corn-mills on the Wandle[55] and eleven on the Ravensbourne, including Robinson's Flour Mill which was still operating in recent times, using, of course, a different form of power. Originally it was a tide-mill, and was nearly wrecked by a very high tide in 1824. A little farther up the Ravensbourne was Brookmills, which once belonged to John Evelyn who, as we have seen, lived near by. He acquired it in 1668, at which time it was used for grinding colour: 'April 28 … To London about the purchase of the Ravensbourne Mills and land round it in Upper Deptford.' In the following century it was destroyed by fire, but was rebuilt and used both for grinding corn and pumping water: in recent years, as the Kent Waterworks, it served only the latter purpose. Many of the monastic establishments had their own corn-mills, and in the reign of Henry VII a special channel was built to bring water from the River Crane to the corn-mill at Syon Abbey. After this property was transferred by James I to the Earl of Northumberland, the artificial river which supplied its mill came to be called after him, and it is still known as the Duke of Northumberland's River.

Other mills turned by the River Crane[56] were used for very different purposes: powder-mills (for grinding gunpowder) were estab-



52. A view of the old Liberty's Water-mill on the Wandle at Merton Abbey, taken in 1992 after renovation. What is left of the mill is now part of the Merton Abbey Mills Craft Village and is operational at weekends.

lished in the middle of the sixteenth century near Baber Bridge, where the Staines road crosses the Crane, and there were still 'sword mills' in existence there in 1783. The powder-mills were most notable for their explosions, which are recorded at various dates between 1758 and 1915; Horace Walpole complained bitterly of one in January 1772 which damaged his newly built house at Strawberry Hill: 'The north side of the castle looks as if it had stood a siege. The two saints in the hall have suffered martyrdom. They have their bodies cut off, and nothing remains but their heads.' On 11 March 1850 there was an explosion that was felt fifty miles away near Chichester in Sussex and made all the pheasants in the Lavington woods crow at once.[57] Temple Mills[58] at Leyton on the Lea were converted to military uses just before the Civil War, and Prince Rupert spent much time there. They were also used as a brass-foundry, for cutting and grinding pins and needles, for boring tree-trunks as water-mains,[59] and in the preparation of sheet lead. There was another Armoury Mill on the Ravensbourne, just above Brookmills.[60] The King's tide-mill at Rotherhithe, originally set up for purely peaceable purposes by the Abbey of Bermondsey, changed its character in 1554 when Henry Reve built here the first gunpowder works in England to be driven by water. He was foolish enough to allow the surrounding marshland to be flooded, and on inquiry it was discovered that he had title neither to the mill nor to the land, and he was thrown out. The enormous mill-pond shown here by Horwood seems to have provided the basis for the later Albion and Canada Docks.

The episode of Henry Reve and the litigations of the Knights Templars are only two examples of the constant disputes and troubles which seem to have arisen round mills and millers. Stow records that in the reign of Edward VI 'a miller of Battaile Bridge was set on the Pillory in Cheape, and had both his eares cut off, for seditious words by him spoken against the Duke of Somerset'. On the other hand on 16 May 1684 a nameless miller of Wandsworth marched to London at the head of 3,000 Surrey men to ask Parliament to restore the King's rights and privileges.[61] Less commendably, a mill on the Ravensbourne (probably at Southend near Beckenham) was in 1604 seized by Francis Olyffe and two others, armed with 'two goones, two daggers, one boe, and eighte arrows'. They may, however, have had some justification – possibly an unpaid debt – since it took a court sentence to dislodge them.[62]

Returning to the various uses made of mills, their employment for industrial purposes must be considered. In 1740 the distinguished publisher, Edward Cave, in partnership with Lewis Paul of Birmingham, dammed up a part of the Fleet (near the modern Charterhouse Street: possibly it was the Faggeswell Brook rather than the main stream) and built a mill to drive a newly invented machine he had bought which had a hundred spindles 'to spin wool or cotton into thread, yarn or worsted', but bad management prevented him from anticipating Arkwright and precipitating the Industrial Revolution. Cave, who thus nearly missed being more famous still, founded the *Gentleman's Magazine* (the first to use the term 'magazine'). His office, in which Dr Johnson was at one period employed, was above the old gateway of the precincts of the Knights Hospitallers.[63] This body, whose descendant is the St John Ambulance Brigade, had itself owned a mill with two waterwheels which was evidently much used, since it was leased in 1338 for a rent of £5. (Apparently this was a lot. Parts of the mill were excavated in 1855.) The adjacent nunnery of St Mary at Clerkenwell also had a mill, and in fact there were so many mills on the Fleet that it was sometimes called Turnmill Brook,[64] a name surviving in Turnmill Street near Farringdon station. A house in Turnmill Street was advertised in the *Daily Courant* in 1741 as being to let, and having 'a good stream and current that will turn a mill to grind hair-powder or liqourish or other things'.[65] In 1750 there was still a snuff-mill working at Bagnigge Wells. Mills were used from the eleventh century onwards for the grinding of fuller's earth with a woollen material to absorb its greasy content; previously this had been done by men's feet. There were several fulling-mills on the Wandle, such as that at Wallington, which belonged to Merton Abbey.

The mills were extensively used in paper-making. The largest paper-mill was that on the Neckinger. Originally this had been one of the mills belonging to Bermondsey Abbey, a Cluniac monastery which was founded in 1082 and destroyed at the dissolution of the monasteries: in 1955 I saw some fragments of it being brought up during the demolition of an air-raid shelter. Its name survives in Abbey Street, Bermondsey, and its good works in its former Almonry, now famous as St Thomas's Hospital, named originally after Becket. After the abbey was destroyed the Neckinger mill was, like Brookmills on the Ravensbourne, converted into a water-machine which raised the Thames water and delivered it to the locality through two main pipes of 6 inches bore.[66] In 1780 it was rebuilt again by Matthias Coops and became the first mill where paper was made from straw. Coops published a book on the subject in 1800.

The variety of purposes for which mills were used and how recently they were still being used is shown in a recollection by Mr W. Courthope Forman in 1922:[67] 'Some forty years ago, when the Wandle was very familiar to me, there were more than thirty mills between Croydon and Wandsworth. There were tobacco-mills, snuff-mills, copper-mills, oil-mills, leather-mills, flour-mills, a parchment-mill, and at least two paper-mills, a large one at Wandsworth and a second between Carshalton and Beddington.' The frontispiece shows the snuff-mill at Carshalton. There was also at Wandsworth one of the very few examples of a combined windmill and watermill, proof against all conditions except drought and calm combined. It was used for rasping log-wood for dye.[68]

Most of the 'clacking mills' so pleasing to Fitzstephen have disappeared. Many are remembered in street names: Turnmill Street on the Fleet; Millbank at Westminster;[69] Mill Lane, Mill Green Road and Coppermill Lane on the Wandle; Mill Street and Millstream Road on the Neckinger; and Brookmill Road, Mill Road, Fordmill Road, Grangemill Road and Knapmill Road on the Ravensbourne. Three Mills on the Lea, an immense and ugly building erected in 1776, is still standing but used for other purposes.

Happily, Merton Abbey Mill on the Wandle, previously used to print silks for Liberty's, survives in working order: in fact it did work, for the first time for 50 years, in May 1992 when it generated electricity to light an exhibition about the Wandle held in the mill. This was part of the *Still Waters* project described on pp152–3. With the enthusiastic co-operation of the management of the Merton Abbey Mills Craft Village it is hoped to operate the mill again from time to time, but the machinery is not in good enough condition to run continuously. Still more encouragingly, it is now planned to install a micro-hydroelectric turbine near the mouth of the Wandle at Wandsworth, using new technology to generate enough power to light a local school or health clinic.

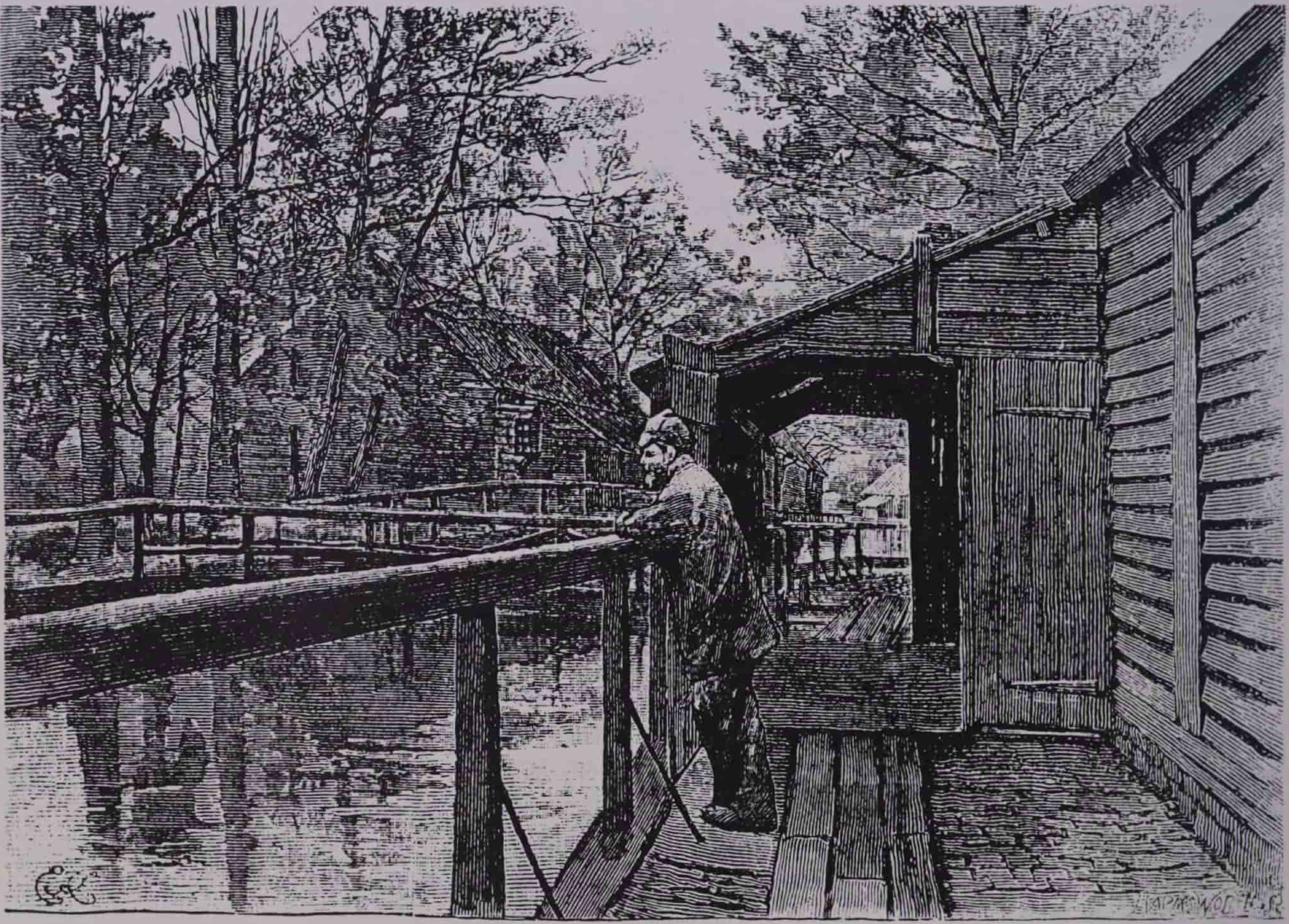
5. Industry

Certain trades which needed water became concentrated along the lost rivers. The most important of these was tanning, the process of converting natural skins into leather, which ranked with cloth as a leading article of trade. Today tanning is usually performed with chemicals, but formerly the hides were soaked in an aqueous extract of oak bark, containing tannin. The tawyers carried out a similar process but by methods not involving the use of tannin.

From the thirteenth to the sixteenth century there were tanners on both banks of the Fleet[70] and in 1504 one of them, John Tucker, who had letters patent allowing him to dye leather and hides a red colour, was accused of befouling the Fleet just after it had been cleaned by laying eight or more skins in it. Tanners also worked along the upper Walbrook and an ordinance of the Skinners' Company in 1365 said they were to stay there, together with the Tawyers and Leathersellers, so that they could be watched over.[71] The Skinners themselves worked along the lower Walbrook and their hall is still near it, in Dowgate Hill.[72] More recently, tanners collected near the Neckinger but Coops (see p. 104), the then owner of the mill at its mouth, had a habit of 'shutting off the tide when it suited his purpose to do so, to the detriment of the leather manufacturers'. Towards the end of the eighteenth century they instituted a suit against him, in which 'the ancient usages of the district were brought forward in evidence and the result was that the right of the inhabitants to a supply of water from the river at every high tide was confirmed, to the discomfiture of the millowner'.[73] At Crashe Mills, too, there was a conflict between millers and tanners, the latter being accused of blocking up the watercourse with 'posts, clay, and mud'.

Cutlers also need water, in which to immerse the forged knives for hardening and tempering before they are ground, and cutlers as well as tanners were concentrated along the Fleet in the thirteenth and fourteenth centuries, and also near the Great Conduit in Cheapside and close to the lower Walbrook.[74] At least one enterprising cutler used the water as a source of power too: a description of the Ravensbourne in 1789 says 'at the hamlet of Southend it moves the engine by which the late Mr How made those knife-blades now so famous throughout England'.[75] Southend was near Beckenham and this may be the same mill which years before had been captured by the heavily-armed Mr Olyffe and his companions (see p. 103).

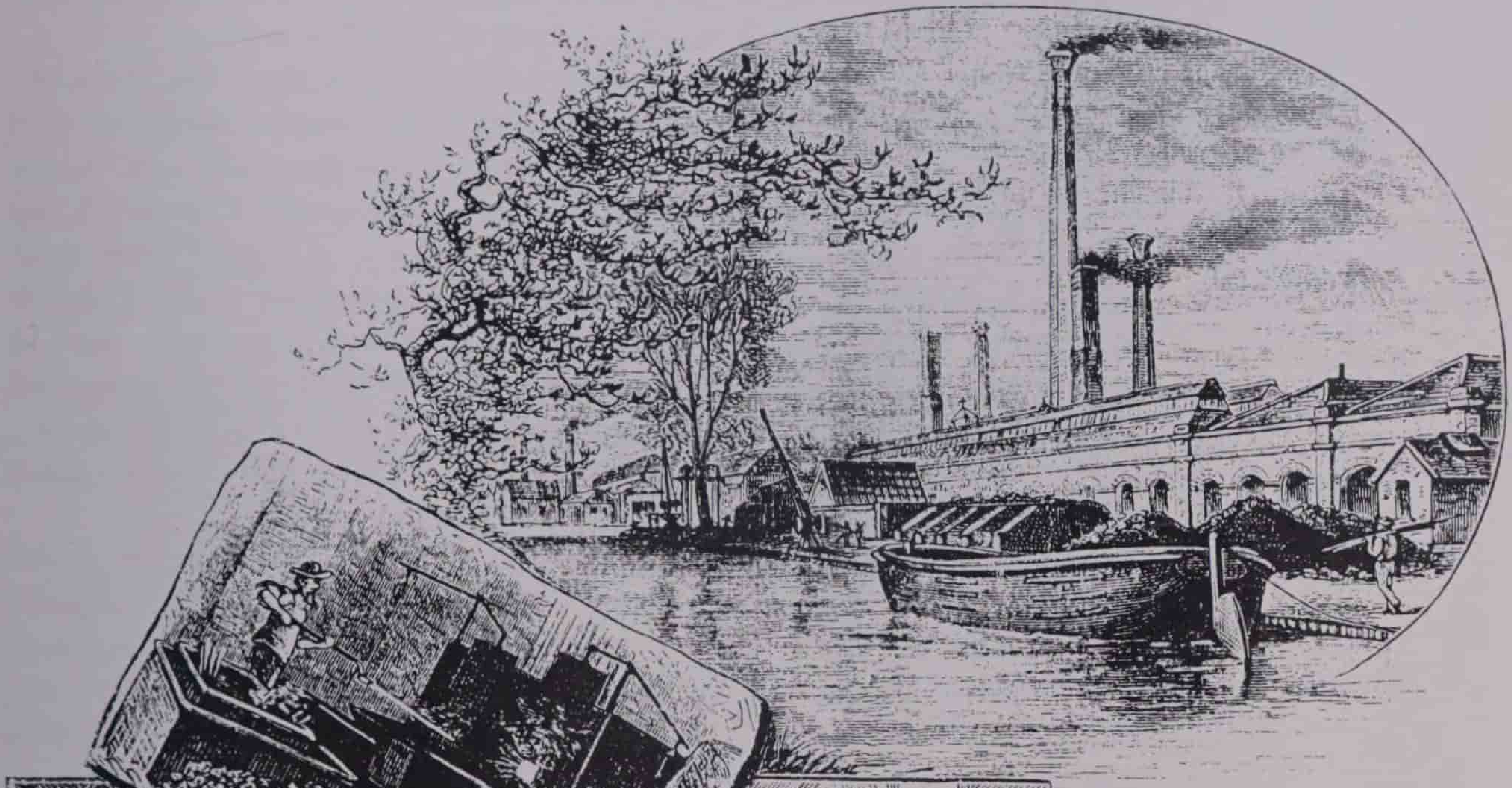
Water was much used in dyeing (though nowadays chemical solvents are often preferred) and the suitability of Wandle water for this purpose was one of the reasons which, in 1881, led William Morris to start his model factory at Merton, where he tried to revive that ideal of personal craftsmanship which he saw to be rapidly disappearing in



53. Powder mills on the River Lea at Waltham.

the machine age.[76] He took over an old Huguenot silk-weaving factory and used it for the design and hand-manufacture of tapestries, carpets, paper hangings, and stained glass. A contemporary description of his factory shows how different it was from the 'dark satanic mills' elsewhere: 'As one turns out of the dusty high road and passes through the manager's little house, the world seems left in a moment behind. The old-fashioned garden is gay with irises and daffodils in spring, with hollyhocks and sunflowers in autumn, and full, summer by summer, of the fragrant flowering shrubs that make a London suburb into a brief June paradise. It rambles away towards the mill pond with its fringe of tall poplars, where the cottons lie bleaching on grass thickly set with buttercups; the long low buildings with the clear rushing little stream running between them, and the wooden outside staircases leading to their upper storey, have nothing about them to suggest the modern factory; even upon the great sunk dye-vats the sun flickers through leaves, and trout leap outside the windows of the long cheerful room where the carpet-looms are built.'[77]

Dyers, like cutlers, used the streams both as a supply of water and a source of power. Again the Wandle provides examples. There were



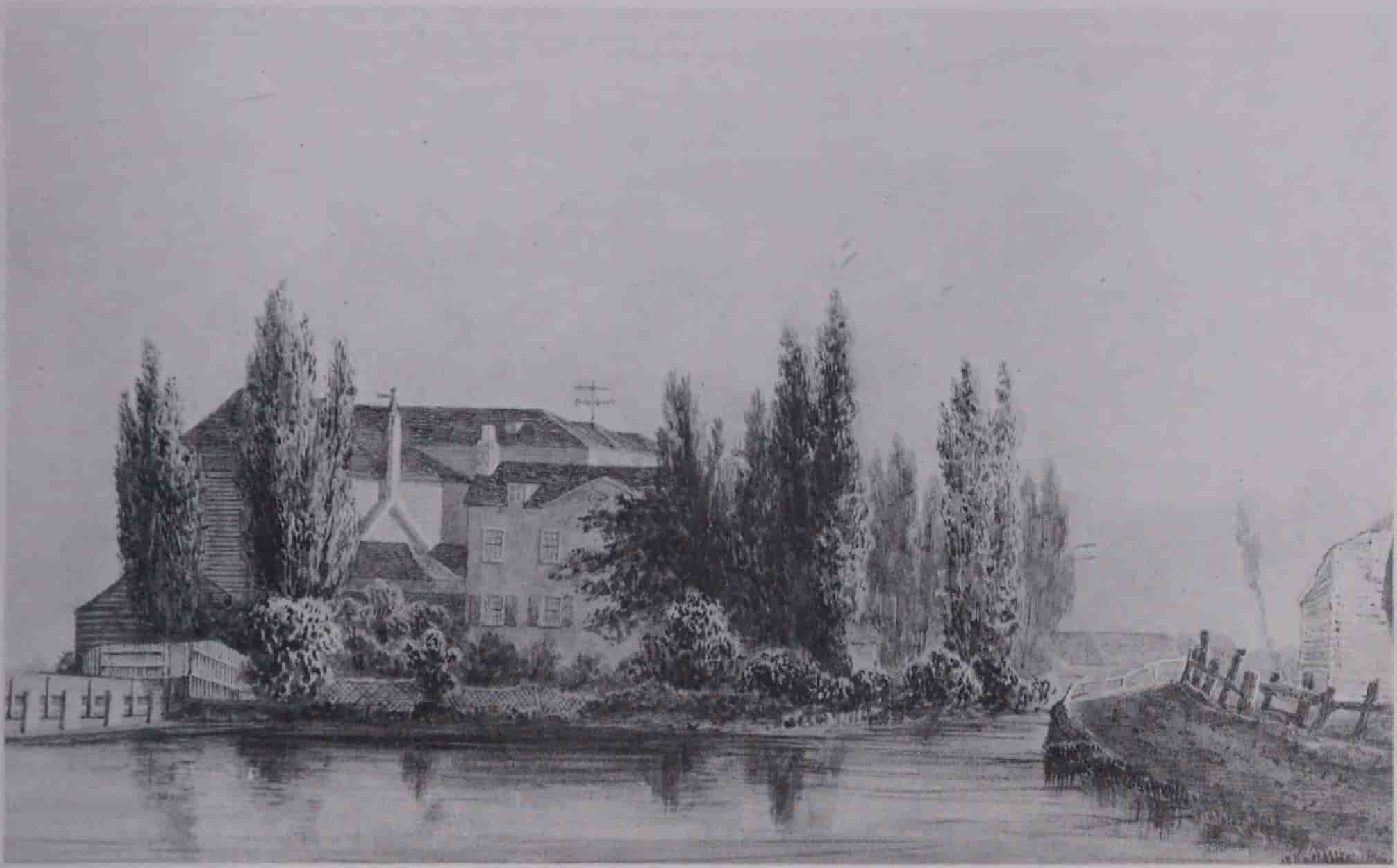
54. *Enfield Small Arms factory on the River Lea.*

several brazil-mills, where dye was ground from a wood grown in Brazil.[78] This process was prohibited in 1532 because the dye had been 'first invented and found by aliens out of this realm of England to the great hurt and slander of woolen goods dyed in the same realm'. The prohibitions were, of course, useless, but the brazil-wood was later supplanted by log-wood (also prohibited at first), which, as we have seen, was ground at Wandsworth by a combined wind- and water-mill (p. 104). Wandsworth was also a seat of the scarlet-dyeing industry, in which the dye was extracted from the cochineal insects: Voltaire, while an exile from France from 1726 to 1729, was the guest of Sir Edward Fawkener, a scarlet dyer at Wandsworth.

The paint manufacturers, Berger, were established on Hackney Brook in the 1760s.[79] Another trade using water (sometimes to excess) is brewing. In the late eighteenth century a Mr Randall, who had a brewery in Homerton, was brewing from the waters of the Hackney Brook.[80] The brewery of Holy Trinity Priory, Aldgate, was near Crashe Mills and probably used the same water as the mills. There is even today a large number of breweries in Acton, and this is said to have its origin in the presence of the three tributaries of the Stamford Brook which pass through the area. Acton is also a 'land of laundries', which is again said to be due to the use of these streams in earlier days.

Other trades gathered along streams because they used the deposits which the streams had laid down. In the thirteenth century tilers flourished on the west bank of the Fleet, around Shoe Lane, and it is probable that they used the clay from the alluvial soil of the old river-bed.[81] Similarly, the gravel-beds laid down by the Wandle at Croydon have been extensively quarried.

The presence of all these different industries, and of the mills, led to the establishment of other industries dependent upon them: thus flour-milling led to baking, and dyeing to calico-printing. Other industries developed because of the possibility of cheap water-borne transport for raw materials of great bulk or weight. The most striking examples of this are gas-works and power-stations: a very large proportion of these were constructed at the mouths of the little tributaries where they joined the Thames,[82] and those which were not were usually on canals. Coal, being heavy, dirty and bulky, but not perishable, was particularly well suited to this form of transport, but other commodities were also suitable, such as the explosives and timber which were brought by the Lea[83] to small-arms factories and furniture factories respectively. Other industries have used the streams for rubbish disposal; thus the Fleet, the Lea and the Westbourne were used by butchers for washing the entrails of their dead animals (see p. 125). The use of the streams by modern industries for cooling purposes is really a specialised example of the same thing; in this case the disposal of heat. Yet other industries have developed close to the streams simply because, for the reasons given above, they already possessed an industrial character. This use of the streams and rivers by industry, still very apparent on parts of the Brent, the Wandle and the Lea, is in itself an excellent thing, but it has usually followed a pattern of drab and dirty monotony which shows all too clearly what such men as William Morris were trying to avoid.

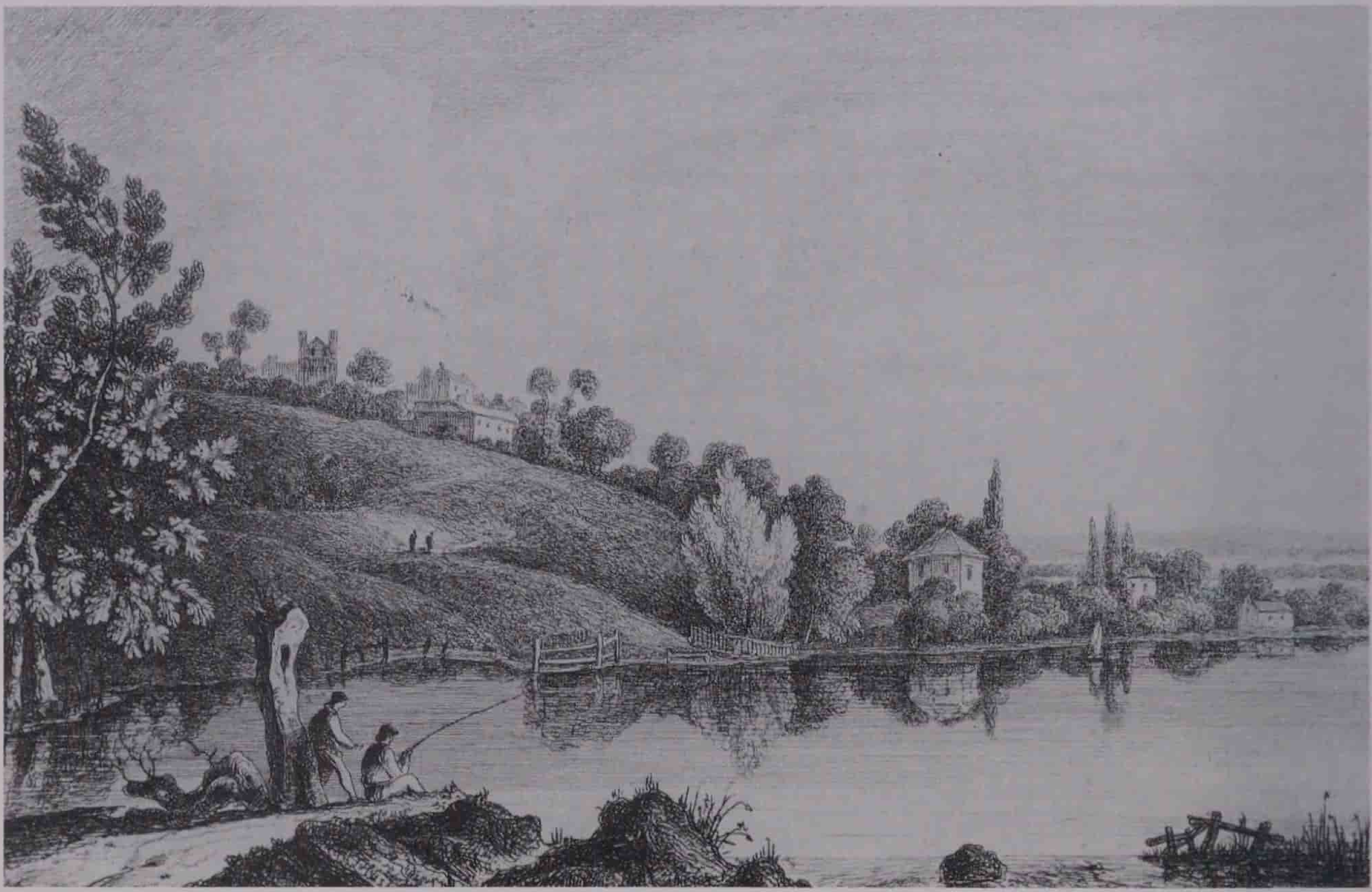


55. Lea Bridge Mills, c1845.

6. Agriculture and Fisheries

The damp conditions close to these streams have made them suitable for the cultivation of certain plants. The most obvious example is watercress: there used to be watercress beds in Hackney Brook,[84] and there still are in the Wandle, at Beddington and Carshalton. Watercress also grew in the Yeading Brook near the watersplash at North Hyde Road, Southall; gypsies used to camp near by and sell the watercress round the locality.[85]

Domesday speaks of a vineyard 'ad Holeburn' and later the Knights Hospitallers and the nunnery of St Mary, then separated only by Clerkenwell Green, had gardens and orchards running down to the Fleet. In a famous scene of Shakespeare's *Richard III*,[86] Richard says: 'My Lord of Ely, when I was last in Holborn, I saw good strawberries in your garden there; I do beseech you, send for some of them.' From Agas's map it can be seen that the gardens of the Bishop of Ely's palace (now Ely Place) were on the slope down to the Fleet: later Queen Elizabeth made this property over to her favourite Chancellor, Lord Hatton, and even today the area is known as Hatton Garden.[87] Vineyard Walk, Pear Tree Court, and Vine Street (in Saffron Hill) also

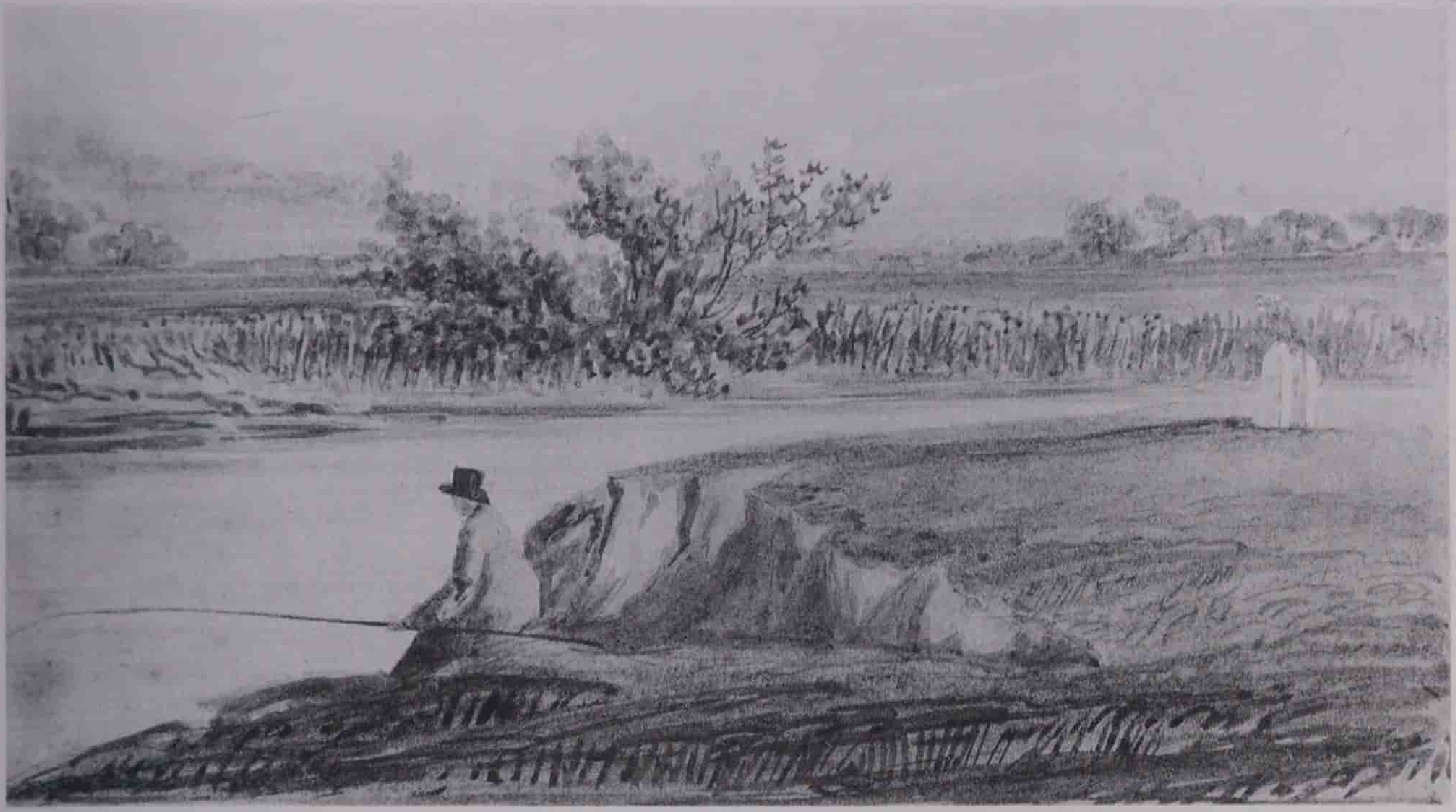


56. Fishing in Highgate Ponds, c1825. The multi-sided building to the right is probably an engine-house owned by the Hampstead Water Company.

bear witness to the horticultural possibilities of this district.

It is known that before its pollution the Thames was full of fish: Henry VIII kept a tame polar bear at the Tower and allowed it out into the river attached by a collar and chain, to fish for salmon, and as late as 1828 there were four hundred fishermen earning their living between Deptford and London.[88] It seems reasonable to suppose that fish were also prolific in the tributaries of the Thames, although apart from the Wandle there are only a few scattered references.

The Wandle has a most distinguished history as a trout-stream,[89] even earning the honour of a mention in *The Compleat Angler*, where Walton described the trout caught there as having marbled spots like a tortoise. Camden referred in 1586 to 'the cleare rivulet Wandle, so full of the best trouts', and by an edict of 1606 the hunting and fishing on the Wandle were made into a Royal Preserve. Evidently this was not respected, since in 1623 Sir Edward Cecil (later Viscount Wimbledon) was put in charge of the Preserve, a reward of twenty shillings was offered for discovering offenders, and it was decreed that the warrant was to be read in all parish churches. Under this regime one Thomas Barker was twice taken into custody for poaching fish between Wandsworth Bridge and Croydon, but there were still fishermen that got away and in 1664 a proper gamekeeper was appointed.



57. Fishing on the River Lea, c1840.

A description of the Wandle in Croydon (where it is now completely underground) in 1830 says that 'as it gurgled through the meadow, the bourne appeared a lovely rivulet, about five feet wide and from one to two feet deep with a nice gravelly bottom for the trout to spawn in, and here they used to catch trout a foot long'.

Other references to fishing in London rivers concern the Lea (another favourite of Isaak Walton's), the Westbourne (see p. 80), and the Stamford Brook, over which a writer of 1889 lamented: 'we well remember catching the agile but thoughtlessly voracious tittlebat in the little brook which formerly ran where Bedford Park now stands, but where is the angler now-a-days who could perform as much?'[90]

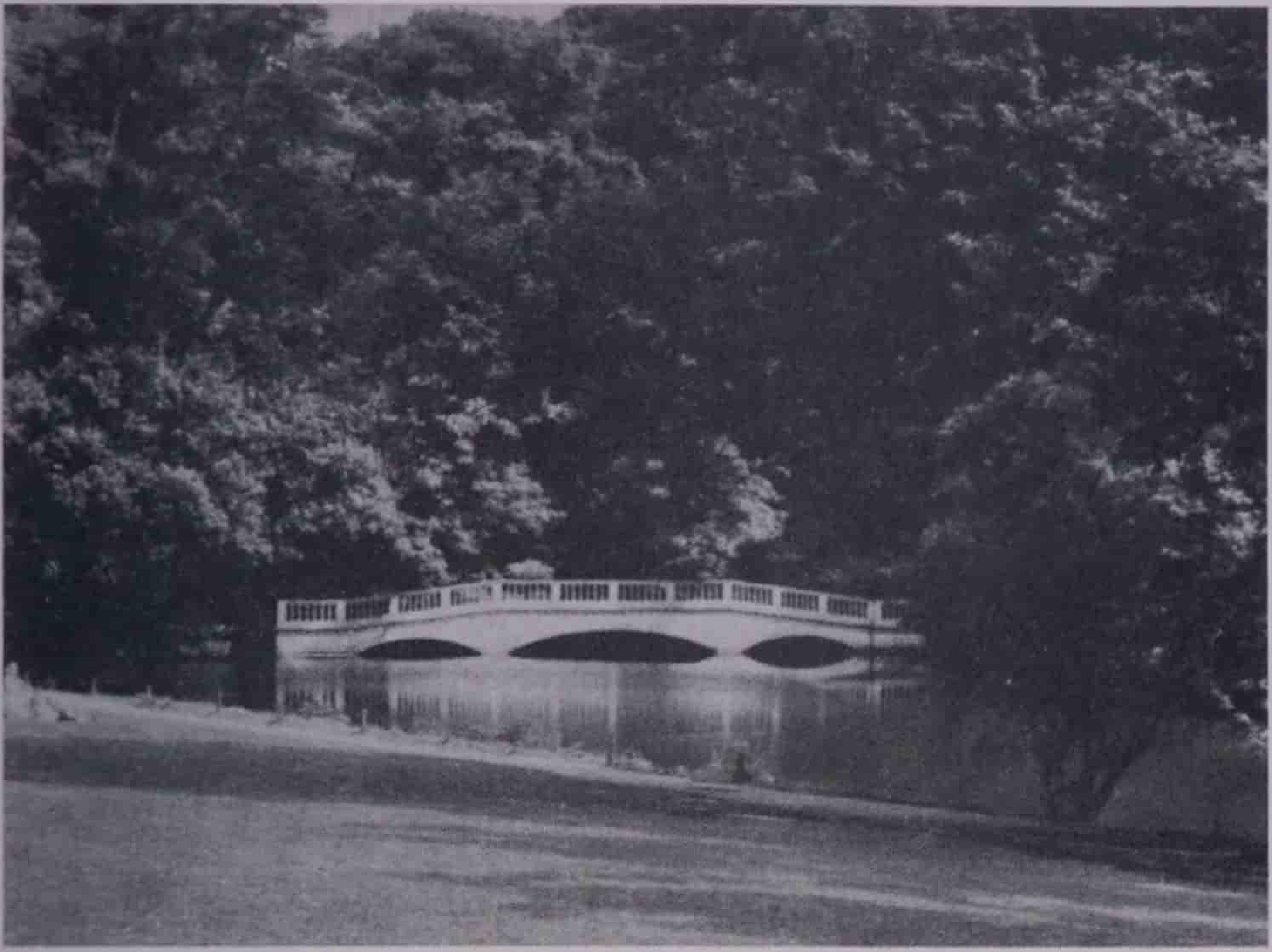
7. Recreation

The attractive surroundings of these streams in earlier times made them pleasant places for relaxation or near which to build a country house. There is a whole series of Roman villas down the valley of the Darent (the next tributary below the Ravensbourne) and at that period even the Walbrook had near to it thickets of birch and alder, as revealed by their pollen which was found by Grimes in the peat close to the stream.

Later generations went further and modified the streams to suit their taste. One of the earliest and most spectacular examples of this is at Hampton Court. When this had been built by Cardinal Wolsey, water was brought in pipes from Coombe Hill, up above Kingston. This supply, however, had certain defects, being – in later years at any rate – 'efficacious on the gravel, excellent for drinking and washing, but unfit for culinary use' because it turned vegetables black. It was therefore reinforced in the reign of Charles I by a new supply from Longford on the Colne (the next tributary above the Crane) whence it was brought in a specially constructed channel no less than ten miles long, to supply the magnificent new ornamental waters.[91] This remarkable piece of engineering was not appreciated by the local inhabitants, who destroyed part of it in 1648, but it was rebuilt, and in 1662 Evelyn described the Park east of the Palace as 'formerly a naked piece of ground, now planted with sweet rows of lime trees and the canal for water now near completed'. The watercourse, variously known as the Longford river, the Queen's river, and the Cardinal's river,[92] not only still exists but still supplies the ornamental waters at Hampton Court and Bushy Park. Contemporary with it is the use of the Pinn, a tributary of the Colne, to make an ornamental water in the grounds of Swakeleys at Ickenham.

In 1730, at the suggestion of Queen Caroline, the wife of George II, the Westbourne was dammed up in Hyde Park and converted into a lake 40 acres in extent.[93] Its curved shape, contrasting with the very formal landscape-gardening of that time, gave it the name by which it is known today: the Serpentine. In this form the Westbourne is used for swimming and boating (of which an unusual example is shown in Ill. 19) and boasts an annual regatta. The water is now obtained from elsewhere. The elaborate system of lakes formed from the River Roding at Wanstead dates from the same period.

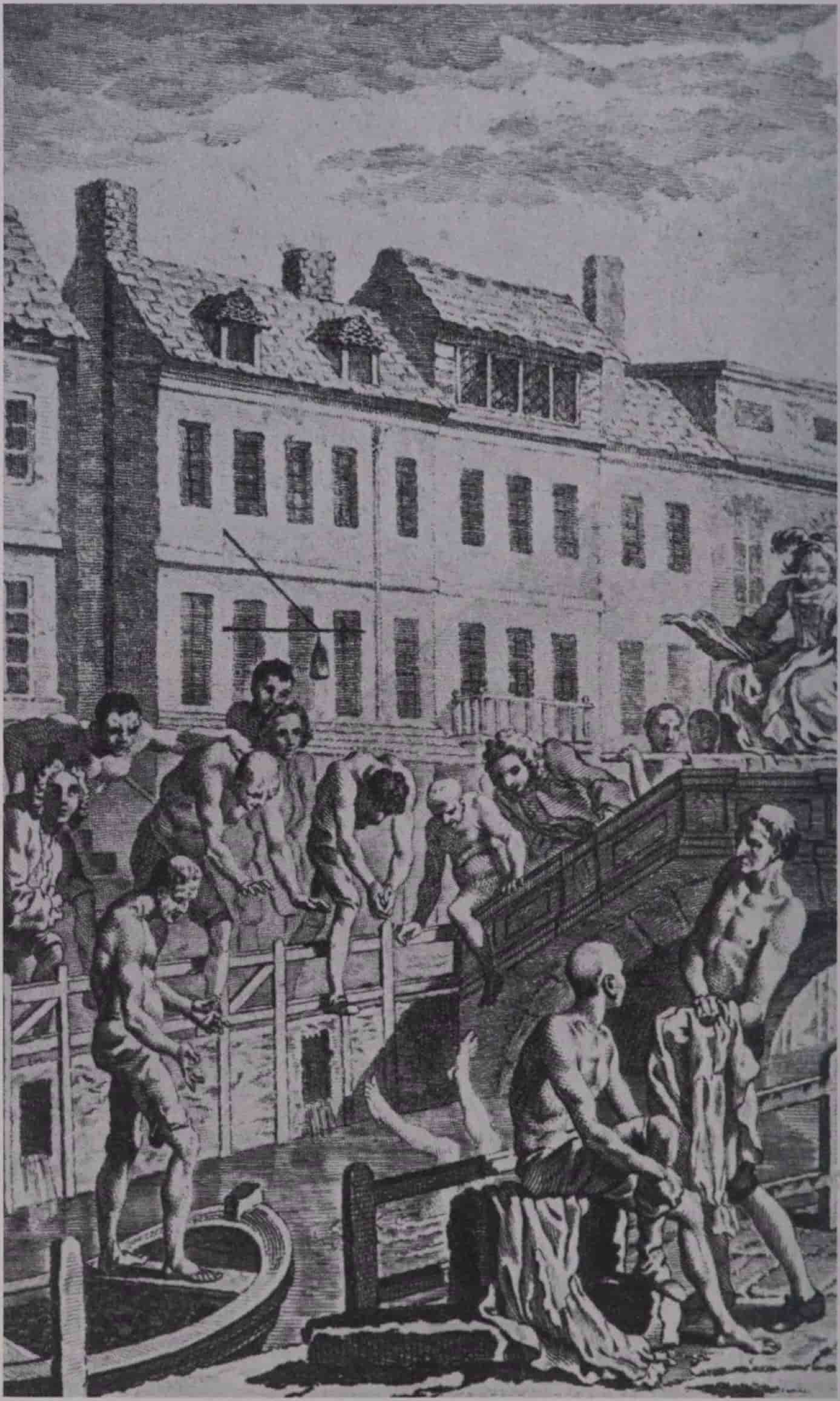
Fifty years later the Effra, 'a pleasant stream, overhung by laburnums, hawthorns, and chestnut trees',[94] was used to make an ornamental water in the garden of one of Adam's houses, 'Belair' in Gallery Road, Dulwich:[95] this is the only part of the Effra still visible today though there are plans to bring it back to the surface again (see p. 152). Rivers are used in the same way in the gardens of other Adam houses: the Brent in Osterley Park, and the headwaters of the Fleet in



58. The lake at Kenwood, scene of open-air concerts. The 'bridge' is a two-dimensional sham.

the grounds of Kenwood House. The lake at Kenwood is now the setting for lakeside concerts, with the orchestra on one side of the water and the audience on the other (see Ill. 58). The same stream lower down forms a chain of six ponds, of which one is devoted to fishing, one to model boating, and one each to men's and women's bathing: similar uses are made of the ponds on the western, or Hampstead, head of the Fleet, though they were originally created as reservoirs (see p. 82). The Brent Reservoir or Welsh Harp, formed by damming up the Brent below the junction of Dollis Brook and the Silk Stream, and the Ruislip Lido on a tributary stream of the Pinn, were also made as reservoirs, in this case to provide water for the Grand Junction Canal (see p. 98). An attempt was made to supply drinking-water from them to Paddington, but the character of the water proved unsuitable and they are now used for various forms of recreation such as swimming, sailing and rowing. In addition the Welsh Harp is an important haunt of water-birds and therefore of ornithologists; and the Ruislip Lido, besides being used for more exotic sports such as water-skiiing, is often employed as the scene for film sequences which involve water, ranging from television advertisements to an old film about the sinking of the *Titanic*.

The Wandle flowed at the bottom of the garden of Lady Hamilton's house, Merton Place, and Lord Nelson, when staying there, used to fish in it. Lady Hamilton actually diverted part of the Wandle and made it flow through the garden as an ornamental water: she christ-



59. Bathing in the Fleet. Illustration from Pope's 'Dunciad'.

ened it 'the Nile'.[96] It was at about this period that the lake in Regent's Park was formed, by damming up the Tyburn below the point where it is joined by a small tributary, thus making a three-pronged lake similar in shape to the Welsh Harp, and also used for rowing and sailing.

When not filled by lakes, the valleys of the streams were sometimes suitable for use as auditoria. Waller[97] points out that the steep valley of the Fleet made a natural theatre, especially where the river twisted, which was used for various entertainments, such as miracle plays at Clerkenwell and Skinners' Well,[98] and the less edifying spectacles of bear-baiting and dog-fighting at Hockley-in-the-Hole.

From the earliest times children have used the streams for bathing and other amusements. Fitzstephen speaks of youths skating on the Fen of Moorfields when it was frozen. Pope, while still able to speak of the Wandle as 'the blue transparent Vandalis', marvelled that anyone should bathe in so filthy a river as the Fleet, but evidently they did:

> To where Fleet-ditch with disemboguing streams
> Rolls the large tribute of dead dogs to Thames,
> The King of Dykes! Than whom no sluice of mud,
> With deeper sable blots the silver flood.
> 'Here strip, my children! Here at once leap in,
> Here prove who best can dash through thick and thin,
> And who the most in love of dirt excel
> Or dark dexterity of groping well.'[99]

(See Ill. 59)

More pleasantly, Waller[100] speaks of mothers bathing their children in that tributary of the Westbourne misleadingly known as Tyburn Brook. The children of William Hale White ('Mark Rutherford', the novelist), who lived in a house at Carshalton which had the Wandle running under a trapdoor in the dining-room, used to launch paper boats in the garden at the back and watch them reappear in the village pond in front.[101] However, White found the house too damp, and Ruskin introduced him to the architect Philip Webb, who built him a new house.[102] Ruskin himself was brought up at Herne Hill, near the Effra, and had a favourite aunt who lived close to the Wandle in Croydon. Looking back on his life, he went so far as to say: 'Although in the course of many worshipful pilgrimages I gathered curiously extensive knowledge, both of art and natural scenery, afterwards infinitely useful, it is evident to me in retrospect that my own character and affections were little altered by them; and that the personal feeling and native instinct of me had been fastened, irrevocably, long before, to things modest, humble and pure in peace, under the low red roofs of Croydon, and by the cress-set rivulets in which the sand danced and minnows darted above the Springs of Wandel.'[103]

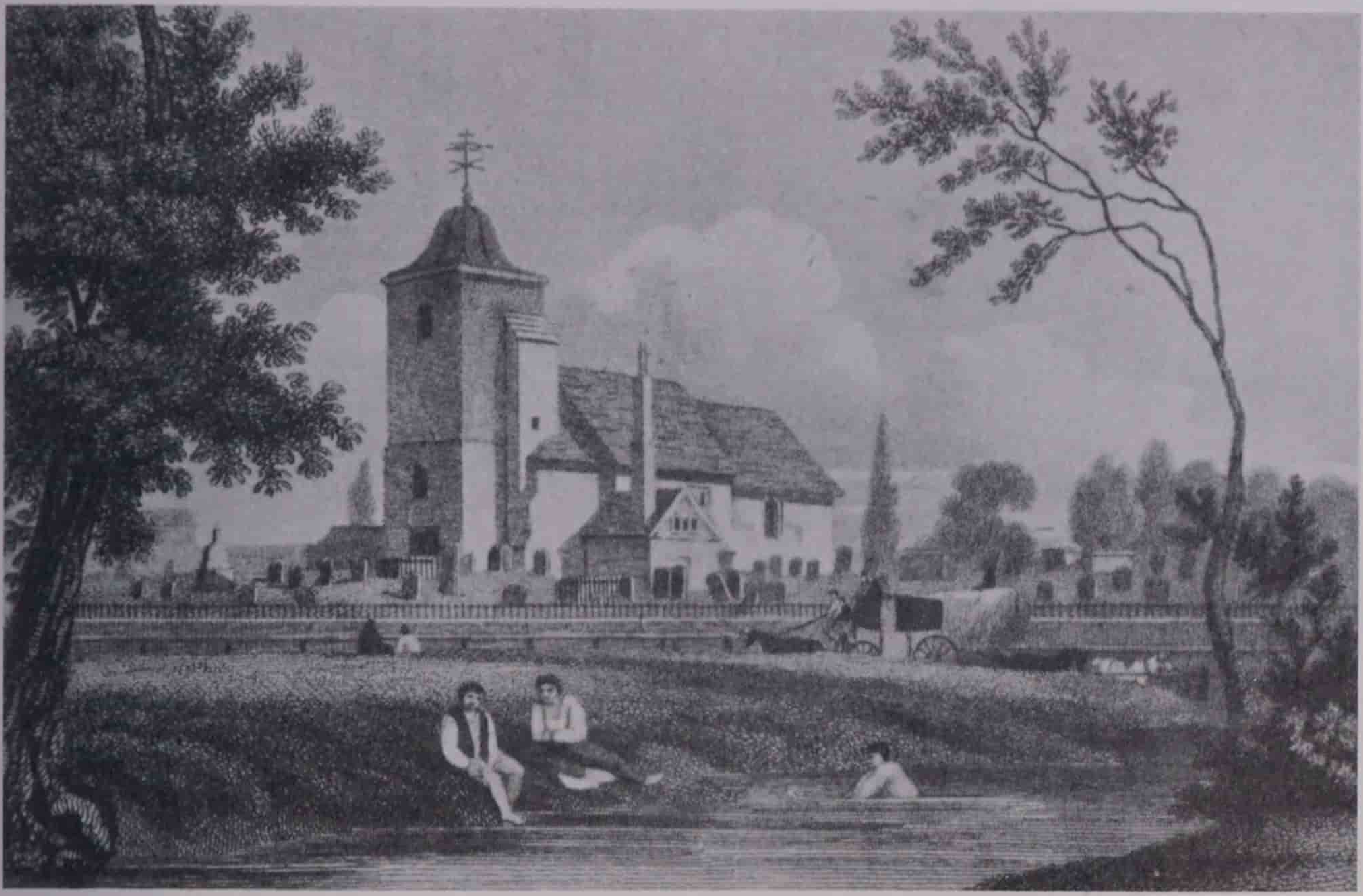
60. The moat at Headstone Manor, North Harrow, which is fed by the Yeading.

The present writer's wife, when a child, used to play in the Yeading Brook, and the writer himself can remember setting out as on a great adventure to find the source of Mutton Brook, a little tributary of the Brent, originally called Moudin's Brook.

These pleasures, however, have not been and will not be preserved without a struggle, and the work of those who have fought for them was described in a newspaper article on the occasion of the opening by King George V of Southfields Park, beside the Wandle.[104].

'This short river has been so hopelessly industrialised that, when the River Wandle Open Spaces Society got to work in pre-war years, it seemed almost hopeless to expect that much could be done.

'The war unfortunately did much, not merely to hinder the work of the Society, but to make permanently impossible the achievement of some cherished objects, because in the meantime factories have been built where it was hoped to secure land. Nevertheless, as soon as practicable, the Society got to work again and it has much to its credit. Its object, based on the programme of somewhat similar societies in



61. *Bathing in a healthier part of the Fleet, near St Pancras Church, 1815.*

America, was to secure that the whole length of the banks of the river should be preserved as in, or restored to, the rural condition so that they should present a continuous strip of living green.

'Nothing shows better how much has been accomplished than a mere list of the open spaces along its banks. A few were in existence before the Society, but most are due to its work. These open spaces begin at the very sources of the river. One branch rises in Wandle Park, Croydon. At Carshalton, part of the grounds of Carshalton Park have been secured in which is another of its springs. Here, too, the pool popularly known as Ruskin's Pool has been cleansed and beautified, and it is noteworthy that Carshalton's War Memorial, one of the most delightfully chosen and placed, is reflected in those limpid and beautiful pools that make Carshalton a memory of delight.

'The Urban District Council of Beddington and Wallington are proposing to purchase a part of Beddington Park, the demesne of the Carews in the old days, and so to preserve a lovely portion of the river in their area. In Mitcham, twelve acres of wild banks in one lot, and a strip of riverside bank in another, are in the possession of the National Trust, and the Urban District Council are providing in a town-planning scheme for the preservation of five acres more of the river banks. Wimbledon has done nothing of late, but part of Merton

62. Oarsmen and canoes on the River Lea at Clapton, c1975.

Abbey walls have been bought,[105] and Wandle Park and the adjoining pond, probably a stewpond of the abbey, were saved some years ago.

'In Wandsworth, two riverside strips which had been used as dust shoots, have been converted into park and grassy embankment for recreation, and other gardens adjoining, or near to, the river have been presented or acquired.

'Little by little the work has gone on, and though much remains to be done and some desirable things can now never be done, numerous portions of the banks have been saved.'

NOTES

1. Grimes.
2. Summarised by Pevsner (1957).
3. de Maré.
4. Stow says it was 200 feet wide in places. It was later known as Houndsditch from the number of dead dogs which were found in it. The best general account of the City wall and ditch is that of Bell, Cottrill and Spon.
5. This had other uses than as a barrier (*vide infra*). The site of the prison is now occupied by the Congregational Memorial Hall.
6. The only complete accounts are by Brett-James (1928 and 1935).
7. See Ashton or Waller for a fuller account.
8. See the account of Lord Grey, who was one of the rebels (quoted by Ashton).
9. Mackay – quoted by Thornbury and Walford.
10. Quoted by Ellis.
11. We have already seen from Stow's description of Fleet Bridge that both bridge and conduit bore the arms of John Wels. Possibly those concerned with the conduit had some responsibility for the bridge over which their pipes passed.
12. This is the answer to Mr Pickwick's problem (see p. 23).
13. Which are housed in one of the most spectacularly foolish pieces of architecture in London: an incredible affair of towers and battlements.
14. A good account is given by Phillips.
15. *London in Miniature* (1755) – quoted by Phillips.
16. Larwood. It is marked on the maps of Mogg and Cruchley.
17. The bridge, with its many piers, acted in effect as a weir: the Thames has never frozen over since it was removed.
18. L.C.C. *Survey of London*, vol. xxvi.
19. Mitchell and Leys.
20. Port. 30, sheet 31, No. 101.
21. Port. 36, sheet 37, No. 57.
22. Round, 1893.
23. Further details and references are given by Honeybourne.
24. Jane A. Wight.
25. An inquiry in this year decided that the moat round the Fleet Prison should be 10 feet wide and contain enough water 'to float a vessel freighted with a tun of wine'. This must surely mean that it was used by such vessels, coming in through the communication with the River Fleet.
26. '...to dispose of it secretly against the ancient custom of selling it openly either at Leadenhall or Newgate shambles', according to a Deed of 1377 quoted by Honeybourne.
27. Stow.
28. The latter was also a distinguished scientist, best known today for his Law about the extension of a spring. They had been together at Westminster School. A full account of the Fleet Canal is given by Reddaway.
29. In another drawing in the Crosby Collection, from inside the sewer, the original Gothic bridge and that of Wren can be seen alongside. This drawing nearly cost Crosby his life, for the water rose and he regained the open part of the river only just in time. His own description of this incident is quoted by Thornbury and Walford.
30. Afterwards, the City presented him with plate worth £200 to mark its appreciation: some years later he was knighted.
31. The coal was brought by sea from Newcastle, a trade commemorated in Seacoal Lane and Newcastle Street.
32. Fèret.
33. Hamilton Ellis. A coal depot at Falcon Lane was built at this time.
34. H.N. Bell, and Priv. Act 16 and 17 Chas. II, cap. 6.
35. *Notes and Queries*, 8th series, vol. viii, p. 375.
36. Both the Earl's Sluice and the dockyard are shown in a picture in Phillips.
37. Mentioned in a comedy called *Eastward Hoe* by Ben Jonson and others.
38. This and the previous quotations are from Thornbury and Walford.
39. The Royal Society, most distinguished of scientific bodies, was founded at this time: its earliest members included Charles II, Wren, Hooke, Boyle, Pepys and Evelyn. Newton was elected soon afterwards.
40. Cf. Ill. 45, by the same artist.
41. See I. Grey. Wren's report is reprinted in *Notes and Queries*, 2nd series, vol. xix, pp. 365–7.
42. 'London Diary', *New Statesman*, 9 June 1961.
43. Hobson. There were at this time many ironworks and forges beside the Wandle, and Hobson suggests that 'the iron-ore, still existing in the Weald, was brought thither by way of Merstham, while the sea-coal for its smelting came by way of Wandsworth'.
44. But what it lost on shipping it made up on water-mills, for which a steep fall is obviously an advantage (see p. 101).
45. Ormsby (1928), following Sir Halford Mackinder.
46. *Anglo-Saxon Chronicle*.
47. i.e. locks having two gates, one at each end of an enclosed space or pound. Almost all locks are now of this type.
48. These quotations are from Robbins.
49. Bull.
50. Robbins.
51. Reid.
52. Knight.
53. The last tide-mill in Great Britain, that at Woodbridge, Suffolk, was at work until 1956, when the 22-inch-square oak shaft of the water-wheel broke; it was restored in 1974. The water-wheel is 20 feet in diameter and 5 feet 10 inches wide.
54. Quoted by Wood. A monks'-eye view of life in the Benedictine Abbey is given by Besant (1895).
55. The places mentioned do not include Wandsworth, which is surprising, since there was probably a mill there very early and certainly in 1381, when it was hired by the monks of Westminster while their own was being rebuilt. There are, however, seven mills mentioned at Battersea, and while some of these were doubtless on the Falcon, this probably includes those on the Wandle at Wandsworth. (The assumption that these were watermills is justified, since windmills were not introduced until the twelfth century.)
56. This is the next tributary above the Brent. Its name is a back-formation from Cranford, so spelt in Domesday Book and meaning 'ford frequented by cranes or herons'. The upper part of the same stream is known as the Yeading Brook, again after a place through which it passes.
57. Robbins.
58. So called because it, too, had belonged to the Knights Templars, who held a manor in Hackney. Temple Mills Lane and Mill Lane mark the site.
59. See p. 84.

60. Rocque's map.
61. Official guide to Wandsworth.
62. *Proceedings of the Lewisham Antiquarian Society* (1908–12).
63. This gateway, though little known, still exists and is well worth seeing. It is in St John's Lane, north of Smithfield.
64. Ashton restricts this name to the Faggeswell Brook but he is alone in this, and the references in the documents dealing with the construction of the Fleet Canal certainly suggest that the main stream of the Fleet was meant.
65. Quoted in 'Old London Rivers', *Chamber's Journal*, vol. xi, No. 565 (1894).
66. The Abbey's other mill, at Rotherhithe, became the gunpowder works referred to on p. 102.
67. *Notes and Queries*, vol. xi, p. 453.
68. Wailes. See also p. 108 of the present work.
69. Engine Street, Piccadilly (now known as Brick Street) may represent another mill on the Tyburn.
70. See p. 99. Honeybourne gives many details. Tan-pits were found near Holborn Bridge when the northern continuation of Farringdon Street was being made.
71. Reader. Tan-pits have also been found in Tokenhouse Yard, off Lothbury.
72. A map showing the concentrations of the main trades in the City is given by Unwin.
73. Knight.
74. Welch.
75. *Kentish Traveller's Companion.*
76. Hobson. Morris may also have been influenced in this, as in other things, by Ruskin, who was a great Wandle-lover.
77. Mackail.
78. *Braza* is Portuguese for a live coal or glowing fire, and was therefore transferred to the wood producing a red or fire-coloured dye. It is said that King Emanuel of Portugal named his South American colony after the valuable wood which it produced
79. Information Melvyn H. Brooks.
80. Robinson.
81. Honeybourne.
82. Rodwell-Jones has a map which illustrates this.
83. Grady.
84. Clarke has a story about a little girl who fell into them.
85. Howard.
86. Shakespeare took this passage from the account of Holinshed.
87. Ashton. See also p. 89.
88. By 1850 there were none, due to the increasing pollution of the river by sewage (see p. 129).
89. Hobson. He lists twenty other types of fish (including eels) also found in the Wandle.
90. *Kemp's West London Sketcher*, 1 March 1889.
91. Robbins.
92. For some reason part of this channel is often called the Duke of Northumberland's River: this appears to be a confusion with the watercourse described on p. 101, to which this name properly applies.
93. Foord.
94. Besant (1908).
95. Foord.
96. A recollection in Walford's *Greater London* of a man called Hudson, then ninety years old, who had married the daughter of Nelson's gardener. He clearly remembered seeing Nelson drive away from Merton on 13 September 1805, shortly before the Battle of Trafalgar.
97. Waller (1875). He further suggests that there was a Roman theatre west of the present Old Bailey, which would also overlook the Fleet.
98. Clerkenwell was at the north-west corner of the modern Clerkenwell Green (see Crow). The Skinners' Well has not been definitely located, but it is described in an ancient deed as 'down in the valley'. Waller places it in the hollow just north of Clerkenwell.
99. *Dunciad* (1728). The reference to the Wandle occurs in *Windsor Forest* (1712).
100. Waller (1890).
101. 'Pilgrimage to Wandle Bank.' Article in *The Times*, 11 September 1957.
102. This was the same Webb who built the famous Red House for William Morris at Bexleyheath.
103. Ruskin (1885). All his writings reflect his lifelong interest in streams and rivers.
104. *Observer*, 29 July 1923 (p. 7).
105. See p. 52 n. 12.

Chapter Ten

DISASTERS, DISEASES AND DRAINS

1. The Rivers in London

WE MUST now consider some more intimate relationships between Londoners and their lost rivers. From the earliest times those who lived near the rivers found themselves involved in certain responsibilities towards them. This may be seen in the repeated attempts to improve the condition of the Walbrook. In 1288 it was 'determined that the watercourse of Walebrook should be made free from dung and other nuisances, and that the rakes should be put back again upon every tenement extending from the moore [Moorfields] to the Thames'.[1] Despite this, in 1383 the stream was 'stopped up by divers filth and dung thrown therein by persons who have houses along the said course, to the great nuisance and damage of all the city'. Rubbish disposal in the stream was forbidden and made punishable, but it was still permitted to have latrines over the course provided they were not used for getting rid of rubbish.[2]

The conditions which could arise are shown by an Inquisition of 1415,[3] which refers to 'a certain common latrine there situate, on the Moor aforesaid. By reason thereof, as well very many cellars and dwelling houses were overflowed, in divers streets and lanes to the said moor near and adjoining, and many sicknesses and other intolerable maladies arising from the horrible corrupt and infected atmosphere proceeding from the latrine aforesaid, from time to time were often prevalent'. To amend this state of affairs, persons living beside the lower part of the Walbrook had to pile or wall the bank, to keep the flow running, and a sluice was formed to carry off water from the moor. In addition, the latrine was replaced by a new one 'upon the Foss of Walbrook'. (In passing we may observe that this latrine was better than some others in the City, such as that at Ludgate which was 'full perlus and defectif', and those on the Thames banks whose supports were used by the fishermen to moor their boats to, with the double result of tripping up passers-by and making the latrines rickety or even pulling them down.)

Some people actually made a living out of maintaining streams and bridges in good condition: for example in 1374 Thomas atte Ram, brewer, received the lease of Moorfields on condition that he 'keep the said moor well and properly and shall have the watercourse of Walbroke cleansed … and shall have the same cleared of dung and other filth thrown or deposited therein'. In return for this he was to receive:

(i) A free lease of Moorfields for 7 years.

(ii) A fee of 12*d*. yearly for every latrine built upon the watercourse during his lease 'for his trouble'.

(iii) Any valuables which he found 'in the dung and filth thereof' while he was cleaning it.[4]

A more important post, probably dating back to William I, was that of Warden of the Fleet.[5] This involved:

(i) Being Governor of the Prison.[6]

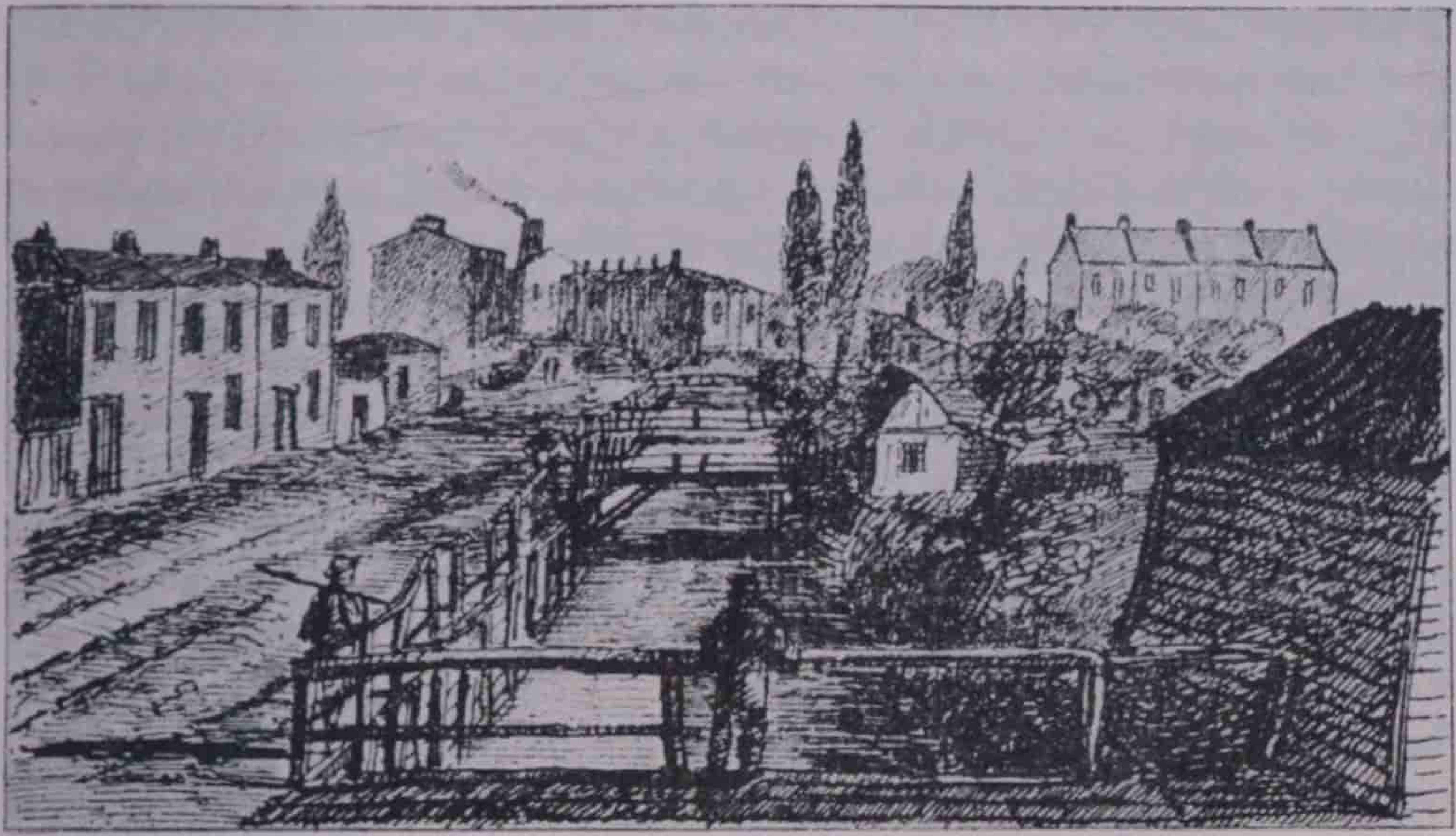
(ii) Keeping the King's Palace at Westminster (now the Houses of Parliament).

(iii) Controlling the customs on the Fleet River. Certain traffic, such as that for St Bartholomew's Hospital (see p. 87) was exempt from customs.

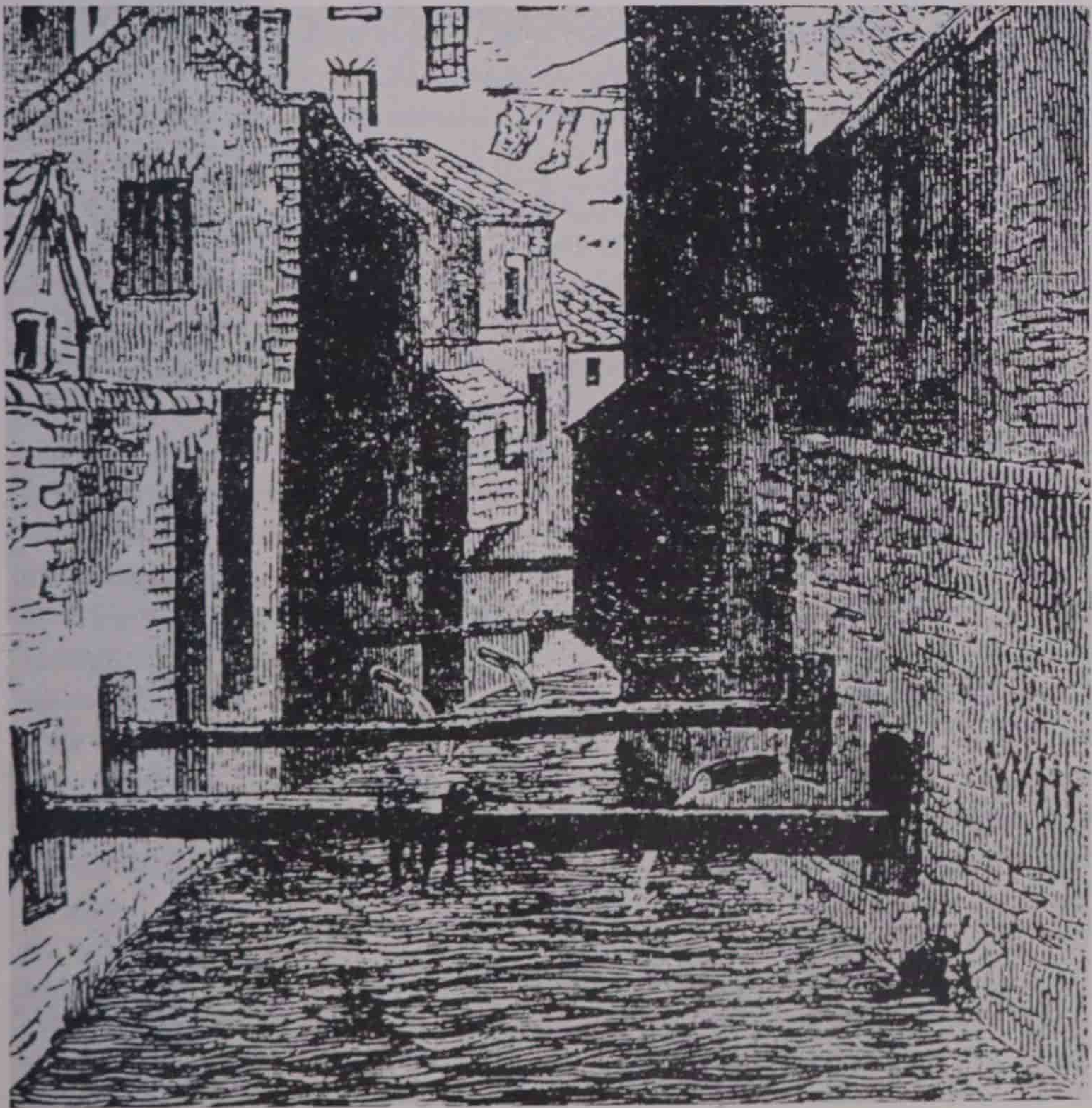
(iv) Repairing the woodwork of Fleet Bridge[7] (the paving was the responsibility of the Sheriffs of London).

The income came from the customs on the Fleet River and from certain rents in the City and suburbs. The job was hereditary, and some of its holders actually took 'de Flete' as their name. The Warden also owned quite a lot of the nearby land. Those who held the post were often in trouble for letting the prisoners out for a few days' holiday, though in at least one instance an untrustworthy deputy was to blame. To assist the chief Warden, seven men were appointed Wardens of Fleet Bridge in 1367, with the task of cleaning all the streets and lanes, and the river-bank. They had power to levy a fine of two shillings on anyone found casting rubbish, gravel or dung out of their doors into the said streets, lanes and River Fleet. Similarly, the bridges over the Walbrook had keepers.

At times, people came literally into contact with the river as a result of accidents. In 1338 five robbers attacked two Florentine merchants travelling early in the morning on the road between Romford and Brentwood in Essex. The merchants hurried to London, searched the streets, and were lucky enough to recognise one of the criminals, John le Brewere. He fled to St Paul's Quay on the Thames and dived in at low tide, hoping to escape under cover of the wharves to Fleet Bridge, but the tide turned and he was drowned. Two days later his body was washed up on the bank of the Fleet near St Bride's, and on it were found 160 florins (worth four shillings each) and a seal belonging to the merchants.[8] In 1557, between six and seven o'clock on the night of



63. *The River Fleet at Battle Bridge, c1840.*



64. *The Fleet in 1844 showing the chutes from the houses discharging into the stream.*

22 January, one John Harris, inebriated, was seen wandering about near the Westminster Abbey Mill, when suddenly he tottered, fell into the water of the mill-stream and was drowned.[9] At Dowgate during a storm in 1574 'a lad of eighteen years old, minding to have leapt over the channel near unto the said conduit, was taken with the stream, and carried from thence towards the Thames with such a violence, that no man with staves or otherwise could stay him, till he came against a cart wheel that stood in the said water-gate, before which time he was drowned and stark dead'.[10]

These deaths, in their different ways, were avoidable, but this was not true of those resulting from floods. These are recorded as occurring on the Ravensbourne as early as 1208,[11] and were a constant problem on the Fleet, first recorded in 1317, when a prolonged drought was ended by a phenomenal thunderstorm, which resulted in serious damage to Holborn and Fleet bridges, and carried away not only houses and mills but both adults and children. In the reign of Henry VI the parishioners of St Pancras complained that their church was too far away from them 'when foul ways is and great waters', and referred to Pancras Wash, where floods were common. The gradual constriction of the river lower down made matters worse, so that the Wash tended to become a vast lake, which sometimes broke its barriers and swept down towards London. Thus in 1679 houses were destroyed as far down as Cowcross and cattle floated on the stream to Clerkenwell: 'property and goods of all sorts and descriptions, including barrels of ale and spirits from the wrecked houses on its route, were carried down to Hockley-in-the-Hole, to become Flotsam for a greedy and excited rabble'.[12] Further floods in this low-lying area of Battle Bridge (Ill. 63) are recorded in 1756, 1761, 1809, and even as late as 1818, when 'the water was several feet deep in many of the houses, and covered an extent of upwards of a mile'.[13] Nor were these troubles confined to the Fleet: 'The Westbourne also was occasionally a source of annoyance to the inhabitants of Knightsbridge through its overflowings after heavy rains: notably in 1768, when it did great damage, undermining the foundations of some of the neighbouring houses'[14] and there are records of people having to take to boats until the floods subsided.[15] As late as the nineteenth century 'the Effra was a troublesome stream in the lower levels of Stockwell and Kennington, for a downfall of rain, even of a moderate character would flood the basements of the houses hereabouts'.[16] The whole area around the lower half-mile of this stream developed late because it was in constant danger of flooding from the tidal creek, and this is why the Oval cricket-ground was never built on. I am informed that in the 1950s the Effra was responsible for a small inundation near the Oval. In outer London the uncovered rivers continue to cause problems, one solution to which is to cover them over.

These floods did at least have one good effect: they washed out the river-beds. But not enough – it has already been shown that the Fleet resisted all efforts to prevent its becoming contaminated, and the same applies to many of the other rivers, although happily in some instances the warnings so plainly given were heeded. What were the causes of the trouble? Continuing to use the Fleet as our example, we may notice the following:

(*a*) Latrines.'In mediaeval London wherever there was running water (or even stagnant water) latrines were built over it as the easiest method of disposal.'[17] Ben Jonson made great play with this in a poem called *On the Famous Voyage* describing a boat journey up the Fleet.[18]

In the first iawes appear'd that ugly monster
Ycleped Mud, which, when their oares did once stirre,
Belch'd forth an ayre, as hot as at the muster
Of all your night-tubs, when the carts doe cluster,
Who shall discharge first his merd-urinous load.

. . . How dare
Your daintie nostrills (in so hot a season,
When every clerke eates artichokes and peason,
Laxative lettus, and such windie meate)
Tempt such a passage? When each privies seate
Is fill'd with buttock? And the walls doe sweate
Urine and plaisters? When the noise doth beate
Upon your eares, of discomforts so unsweet?

This must be one of his worst poems, but Jonson (another former Westminster schoolboy) had lived beside the Fleet at Blackfriars, and perhaps he had cause to be bitter. At least he wrote from first-hand experience.

(*b*) Rubbish disposal. In 1343 the butchers of the Shambles in Newgate Street were very short-sightedly given permission to use a dilapidated wharf on the Fleet near the prison, for cleansing the entrails of slaughtered beasts in the river.[19] (The wharf was probably that at which St Bartholomew's Hospital had landed its corn and hay in the previous century.) This rapidly became a nuisance, which continued despite edicts in 1361, 1380 and 1391 that large animals were not to be slaughtered nearer London than Stratford and Knightsbridge, and was still occurring in the time of Jonson:

The sinkes[20] ran grease and hair of meazled hogs,
The heads, houghs, entrails, and the hides of dogs.

Together with other rubbish thrown in by the citizens[21] and sailors, this so obstructed the river that in 1662 Honest John Fuller wrote of 'the Fleet, so called from its former fleetness, though now it creepeth slow enough, not so much for age as the injection of the city refuse wherewith it is obstructed'. Swift and Steele, in 1710, could still write:[22]

> Now from all parts the swelling kennels flow,
> And bear their trophies with them as they go:
> Filth of all hues and odours seem to tell
> What street they sail'd from, by their sight and smell...
> Sweepings from butchers' stalls, dung, guts, and blood,
> Drown'd puppies, stinking sprats, all drenched in mud,
> Dead cats, and turnip tops, come tumbling down the flood.

It is pleasant to record that this ill wind did blow somebody some good: 'A fatter boar was hardly ever seen than one taken up this day, coming out of the Fleet Ditch into the Thames. It proved to be a butcher's near Springfield Bar, who had missed him five month, all which time he had been in the common sewer, and was improved in price from ten shillings to two guineas.'[23] At the same period, there was reported to be a whole tribe of wild pigs living in the Fleet at Hampstead, unable to escape because their stubbornness only permitted them to swim upstream.

The *Newgate Calendar*[24] records another form of rubbish disposal in the Fleet, happily less common. There was a house near Smithfield which was in the eighteenth century the haunt and hiding-place of all sorts of burglars, footpads, fences and other villains.'It stood alongside the brook, whose rapid torrent was well adapted to convey away everything that might be evidence of crime', and there were trapdoors to facilitate this, which could even be used as an escape-route by hard-pressed criminals.'Once a sailor was decoyed there, robbed and thrown naked out of a window into the stream, and was taken up at Blackfriars bridge a corpse.'

(*c*) The accumulation of silt, brought down by the river from above. This was one of the greatest problems in the construction of the Fleet Canal.

(*d*) Obstruction to the flow, by the rubbish and silt already in the river, by the gradual encroachment of buildings, and by mills.

These were the causes of contamination. What were its results? These too may be classified under four headings:

(i) The river became unbearably smelly. As early as 1290 the monks of Whitefriars, who were two hundred yards away, complained to the King in Parliament of the 'putrid exhalations' of the Fleet. They asserted that the stench was so powerful as to rise above the scent of the incense burnt upon their altar, and that it had already caused the deaths of several of the brethren.[25]

(ii) It discouraged the use of the river by shipping for reasons made plain by Jonson.

(iii) It promoted squalor and poverty, and this in turn promoted crime. The neighbourhood of the Fleet had been a resort of bad characters at least since 1374, when Robert Duke of Brampton terrorised the citizens by shooting arrows by night at the inhabitants of Fleet Street. Even in the last century it was said that you might have your pocket picked of your handkerchief at one end of Field Lane, and buy it again at the other end, with the marking taken out.

(iv) 'Abused for centuries, the Fleet became a frequent source of epidemic disease.'[26] Referring to this, a Dr Jones wrote in 1560 that in the Fleet valley and its 'stinking lanes, there died most in London and were soonest inflicted and were longest continued, as twice since I have known London I have marked it to be true'. Jonson, at the same period, refers frequently to plague and disease in the *Famous Voyage*.

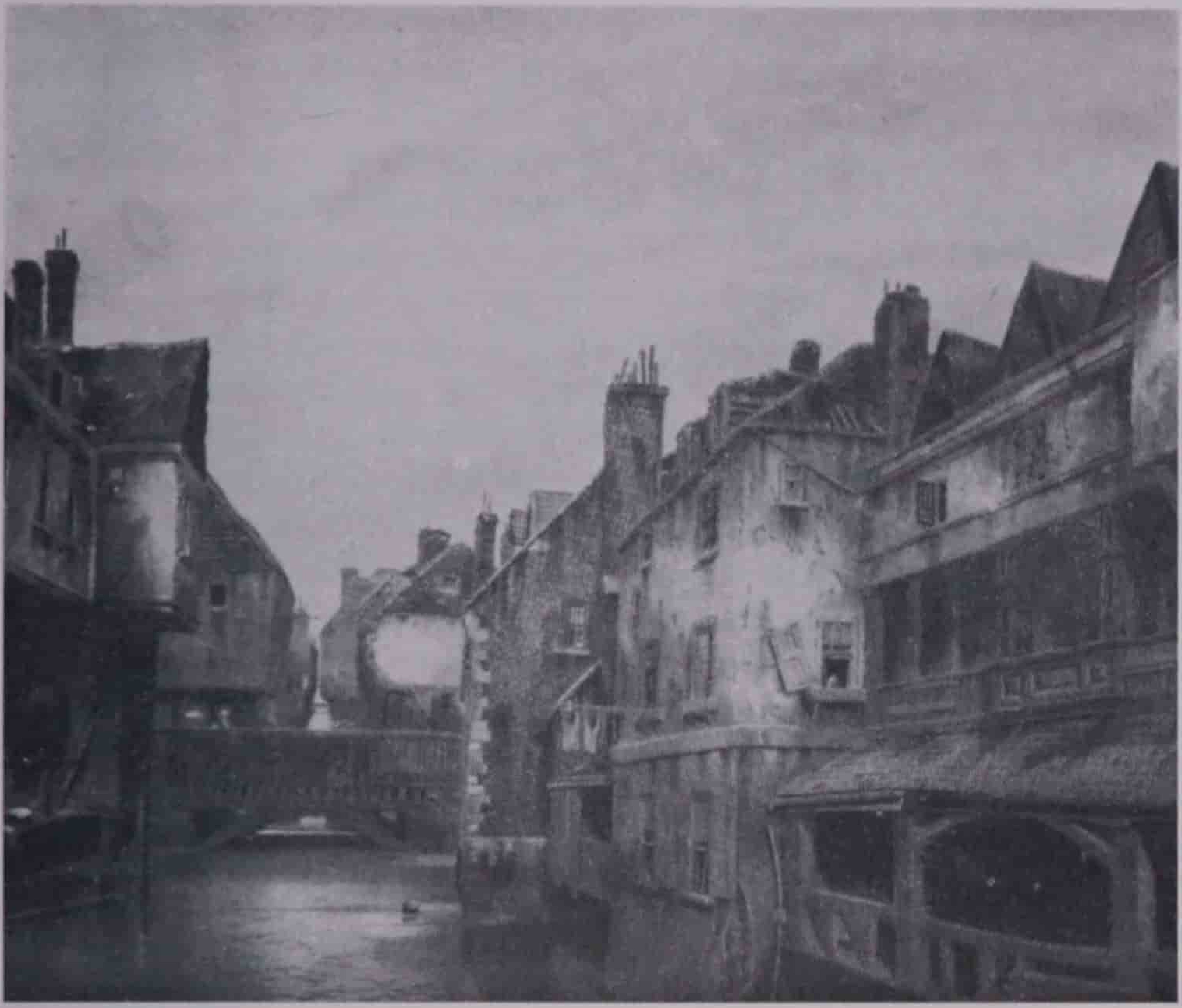
It was the increasing number of these epidemics which had led in 1531 to the creation of eight regional boards of Commissioners of Sewers, whose minutes, kept in the Greater London Record Office, are a little-tapped mine of information. Previous quotations will have given some idea of their work (see pp. 52, 63–7). Their method of operation was to appoint a jury (and thus anyone might suddenly find himself concerned with sewers and streams) to examine a particular area and report on the needs: from these reports they drew up recommendations for action. Unfortunately they stuck to the old lines in their improvements and for the most part restricted themselves to rebuilding old sewers rather than creating new ones. This prevented them, for all their activity, from achieving any real improvement and this was underlined in the last and greatest of the plagues, that of 1665.'In parishes close to the Fleet – St Bride's, St Sepulchre's and St Andrew's, Holborn (and St Giles, Cripplegate, by the water-soaked moor) – the plague mark was most darkly drawn ... In every parish along the Fleet, the Plague stayed and destroyed.'[27]

The real purpose of the Fleet Canal can now be appreciated, and although it was a commercial failure, it undoubtedly effected a great improvement in the area: for example, the *Famous Voyage* could not have been written after 1670, and the smell must have been less, because there was a coffee-house, the Rainbow, on Fleet Bridge in 1751. But the passages quoted from Pope and Swift (see pp. 115 and 126), and a reference by Gay ('...if where Fleet Ditch with muddy current flows...) show that conditions remained unsatisfactory: in 1763 a drunken barber from Bromley slipped in and, being unable to extricate himself from the mud, was frozen to death. The patriotic Lord Chesterfield, seeking a derisive comparison for the Seine, said that they had a river in London like it, and called it the Fleet Ditch.

At last what was so obviously needed was obtained, and this and other rivers were covered over. Curiously enough, this improved conditions inside as well as outside the sewers, and there grew up a band of people called 'toshers' who sometimes spent as long as eighteen hours at a time in the sewers, going as far up as Camden Town. A description of 1851[28] says: 'Many persons enter at low tide, armed with sticks to defend themselves from rats, as well as for the purpose of sounding on their perilous way among the slimy shallows; and carrying a lanthern to light the dreary passage, they wander for miles under the crowded streets in search of such valuables as are carried there from above.' Their income averaged 6*s*. a day. Mayhew, in his great survey of the seamy side of Victorian London, was amazed that they were so healthy, and remarked 'the men appear to have a fixed belief that the odour of the sewers contributes in a variety of ways to their general health'. A highly specialised application of the tosher's trade was discovered by a gentleman who wrote and challenged the directors of the Bank of England to meet him in their inmost vaults on a given night: when they went down there, he appeared through the floor from an old sewer.[29] It is still possible to explore some of these sewers: Mr J.D. Carleton once made his way several hundred yards up the Westbourne from the Thames, and Bull, writing in 1929, said: 'You can now, if you get permission, walk up the Stamford Brook as far as Acton. It is in size a little smaller than a tube railway tunnel.'

Although in some places the rivers had been covered over by the middle of the last century, in others they had not, and conditions of unbelievable squalor existed. Particularly was this true of the Neckinger in the part of Bermondsey known as Jacob's Island (Ill. 65). This was considered by Dickens, who really knew his London, to be 'the filthiest, the strangest, the most extraordinary of the many localities that are hidden in London'. It is the scene for the end of *Oliver Twist*,[30] where it is described as follows:

'...crazy wooden galleries common to the backs of half a dozen houses, with holes from which to look upon the slime beneath; windows, broken and patched, with poles thrust out, on which to dry the linen that is never there; rooms so small, so filthy, so confined, that the air would seem too tainted even for the dirt and squalor which they shelter; wooden chambers thrusting themselves out above the mud and threatening to fall into it – as some have done; dirt-besmeared walls and decaying foundations, every repulsive lineament of poverty, every loathsome indication of filth, rot, and garbage: all these ornament the banks of Jacob's Island.' Conditions such as these inevitably bred disease: the *Morning Chronicle*[31] described the area not only as 'the Venice of drains' but as 'the very capital of Cholera', and said of one of the tidal ditches 'in the bright light, it appeared the colour of strong green tea, and positively looked as solid as black marble in the shadow – indeed it was more like watery mud than muddy water'. Charles Kingsley wrote to his wife in 1849: 'I was yesterday...over the cholera districts of Bermondsey; and, oh God! what I saw! people having no water to drink – hundreds of them – but the water of the common sewer which stagnates, full of...dead fish,



65. Jacob's Island, Bermondsey, c1840. One of a group of paintings by J. Stewart of actual places mentioned in Dickens's books.

cats and dogs, under their windows.'[32]

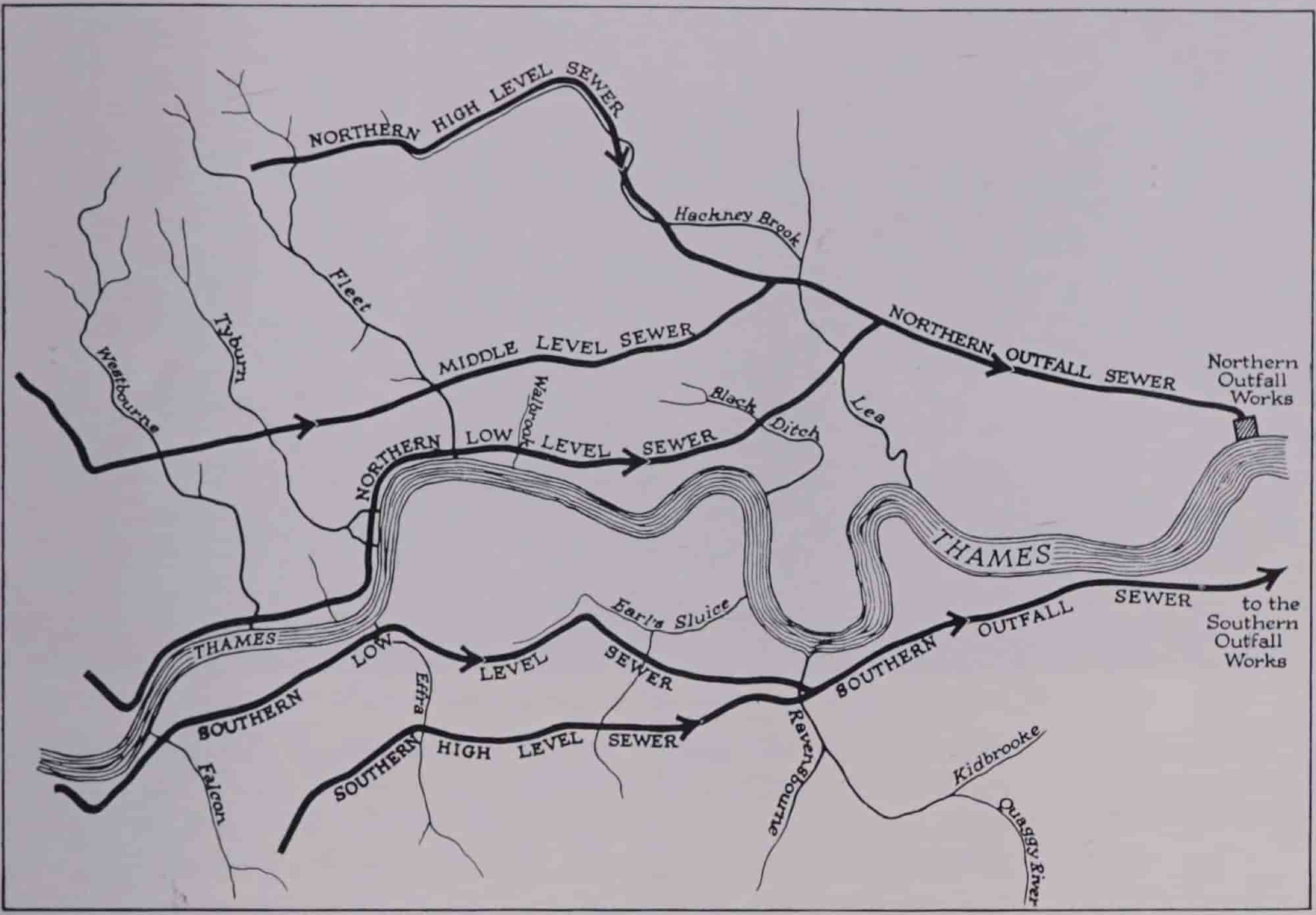
Indeed, cholera was rife throughout London, and no wonder, since most of the houses had cesspools from which the sewage 'was either removed at infrequent intervals by "nightmen" or was carried by drainpipes, frequently porous, into the sewers and so ultimately to the Thames',[33] whose banks were thus covered with vast accumulations of foul and offensive mud which were exposed at low tide. In 1832 the Fleet was reopened and made into a proper sewer, but in its upper part sewage was still draining directly into the open ditch (Ill. 64), and its mere reopening was enough to provoke an epidemic of cholera in Clerkenwell Prison.[34]

The problem was made still more serious by the introduction of water-closets (demanding an improved method of removing liquid household waste) and by the overcrowding which resulted from the doubling of London's population between 1800 and 1850. The great philanthropist Lord Shaftesbury reported on a house, built over a sewer, with a hole in the floor through which rats made their way, twenty at a time, into the lower room; a cellar, inhabited by a woman and two children, through which all the filth of the house above flowed in an open wooden chute into the sewer; and on a room in which a woman and three children were living, whose floor was less than one foot above an open cesspool.[35]

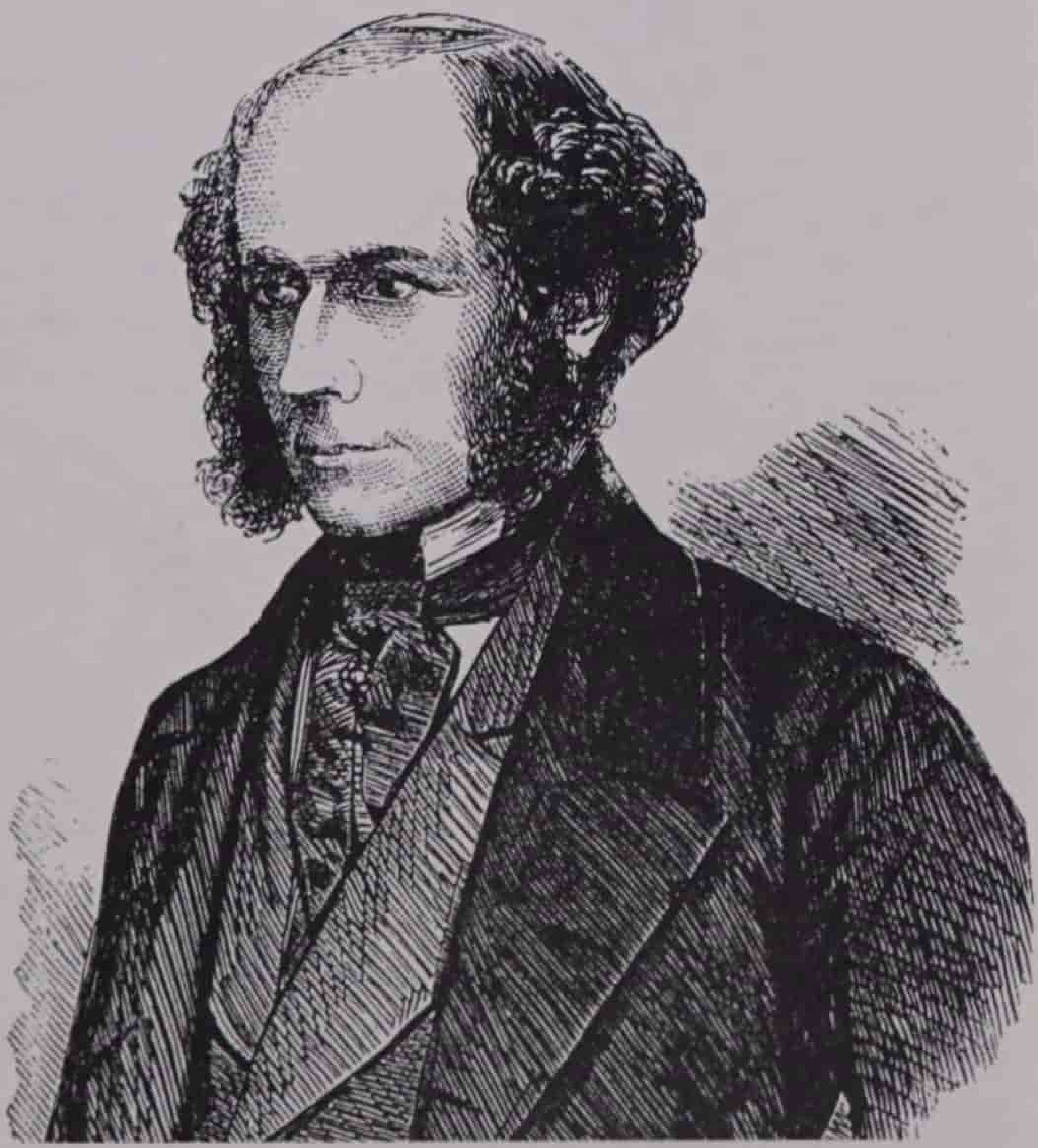
Just as the sewer-building in the seventeenth century had been carried out in the shadow of the plague, so that in the nineteenth century was carried out in the shadow of the cholera. In 1847 the eight boards of Commissioners were replaced by one, the Metropolitan Commission of Sewers, but bureaucracy and apathy, together with the belief that the sewage should be put to some commercial use as an agricultural manure, prevented real progress, and in the next nine years a succession of six differently constituted Commissions was appointed. Nevertheless, 'death could not wait for profit' and the facts could not be denied, being forced upon the attention of those in authority by men like Chadwick, who was so determined to obtain reliable and indisputable information that he 'made his way personally into the sewers and explored their hideous and noisome recesses'. In 1854 Dr John Snow (who is better known for having given the anaesthetic to Queen Victoria when she had her children, and thus made anaesthesia respectable) showed that cholera was due to the contamination of drinking water by sewage and offered his famous advice to the parish council of a particularly hard-hit area of Soho: 'Take away the pump handle.'[36] The immediate effect of this was dramatic, but obviously the people had to get drinking water from somewhere and the system of supply was so intimately blended with the sewage system that Snow's discovery could confer no real benefit at this time. Trench and Hillman quote at length a description of the Tyburn sewer by John Hollingshead, who made a journey down it in 1860.[37]

In 1856 the Metropolitan Board of Works was formed, with Joseph Bazalgette as chief engineer, but even so it was not until after 'the Great Stink' of 1858, when the windows of the Houses of Parliament had to be draped with curtains soaked in chloride of lime so that members could breathe, that an Act was passed which resulted in the carrying out of Bazalgette's plan for intercepting sewers. Thus the Augean stables were at last cleansed.

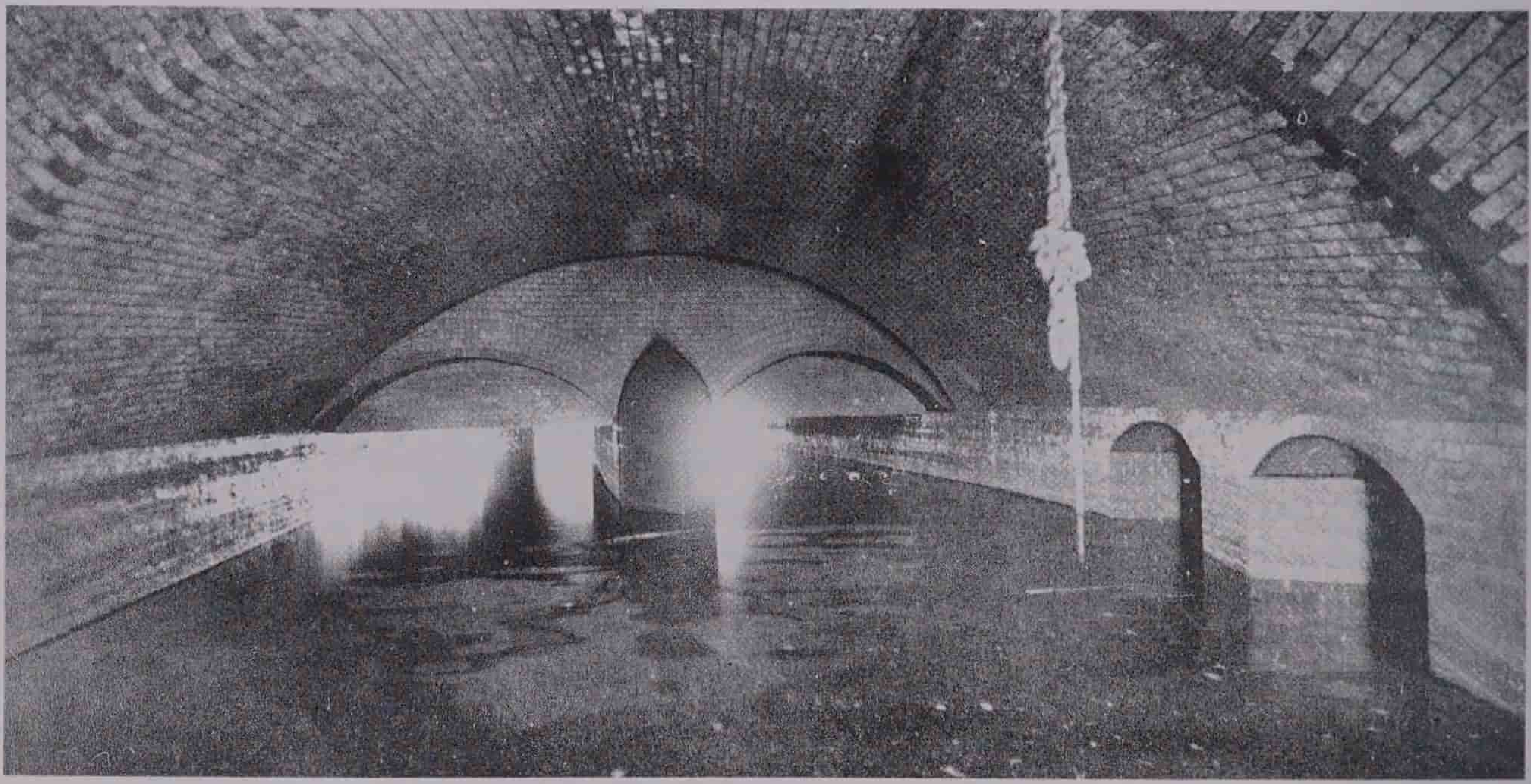
Bazalgette's plan, illustrated in Map 10, had the great virtue of being radically new, and so satisfactory has it proved that it has needed little amendment in the hundred years since it was built. Three large new sewers on the north and two on the south cross London from west to east, intercepting the old sewers on their way to the Thames. Thus, in the Fleet, part of the water is carried off at Hampstead and at Highgate by the High-level sewer (which closely follows the course of the Hackney Brook for about four miles), any excess at King's Cross by the Middle-level sewer, and the attenuated remainder by the Low-level sewer at Blackfriars. The contents of the intercepting sewers, lifted at intervals so that they can continue their eastward flow by gravity, converge into huge outfall sewers by which they are carried to outfall works well below London. A description of


NORTHERN HIGH LEVEL SEWER
Hackney Brook
Fleet
Tyburn
Westbourne
MIDDLE LEVEL SEWER
NORTHERN OUTFALL SEWER
Northern Outfall Works
Walbrook
Black Ditch
Lea
NORTHERN LOW LEVEL SEWER
THAMES
THAMES
Earl's Sluice
SOUTHERN LOW LEVEL SEWER
SOUTHERN OUTFALL SEWER
to the Southern Outfall Works
Effra
SOUTHERN HIGH LEVEL SEWER
Ravensbourne
Kidbrooke
Quaggy River
Falcon

MAP 10. *Bazalgette's plan for intercepting sewers (1858).*



66. *Joseph Bazalgette (1819–91).*



67. The Fleet sewer, just before it joins the Thames, in the 1960s.

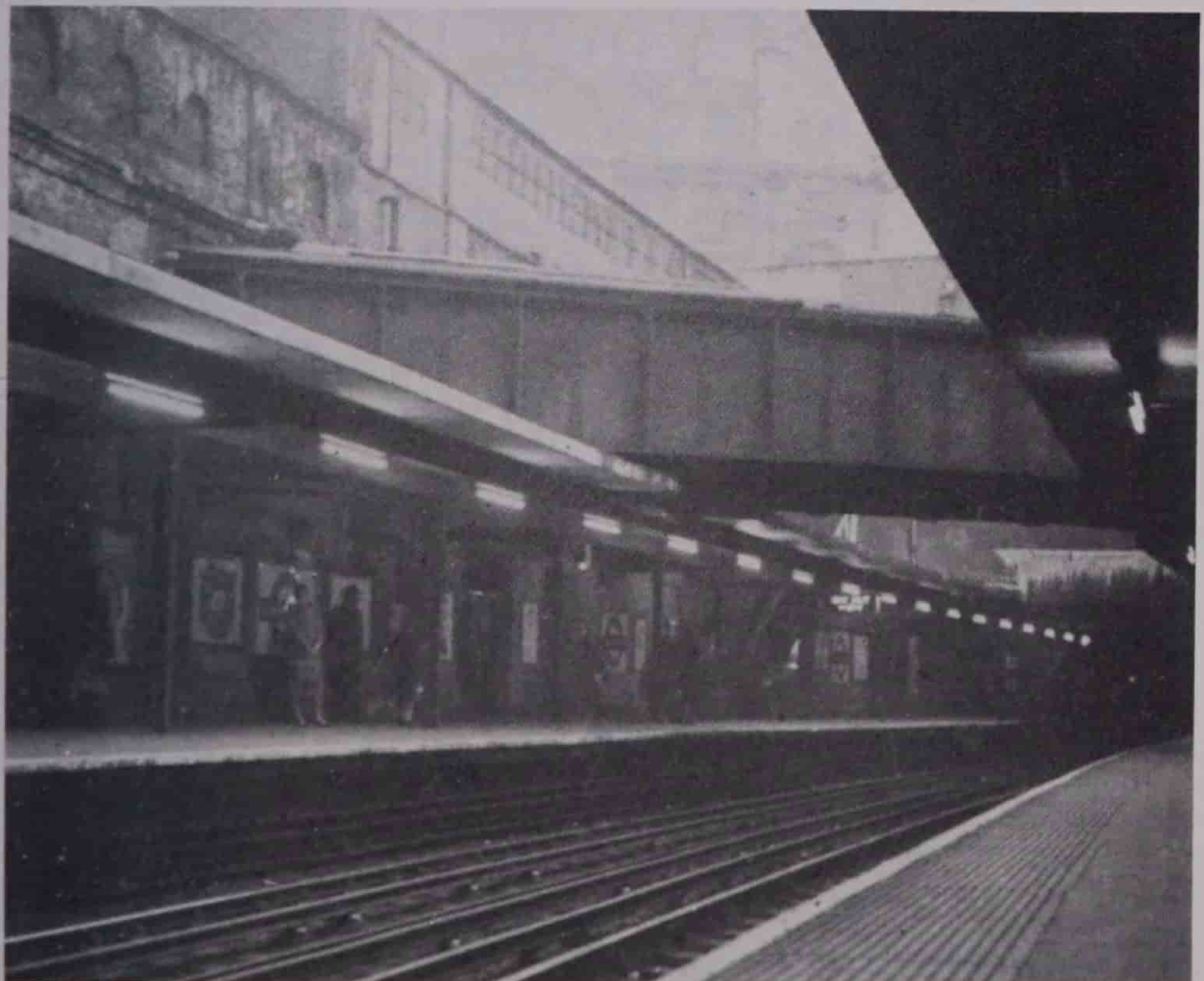
these is given by Newby. The process of sewage disposal, which is carried out at works such as these, is very complicated,[38] but basically there are three things you can do with sewage: you can make use of it in some way, you can treat it chemically to render it harmless, or you can throw it away. In London they do all three: the methane which issues from the sewage is used to drive the turbines, the sewage is treated by a method most splendidly named 'the activated sludge process', and the residue is carried out by special ships into the North Sea and dumped sixty miles out in the Black Deep.

The old rivers are relegated to the function of storm relief sewers, which is in fact an important one since rain in towns (unlike rain in the country, which simply sinks into the earth) suddenly produces a large quantity of water which the drainage system must be able to handle. It is, therefore, the water from the gutters at the sides of the roads which is now carried in most of the lost rivers, and the sudden great changes in flow which occur have already been illustrated in the description of the Tachbrook (p. 39). In the low-lying areas there are pumping-stations to pump storm water out of the sewers into the Thames: these are situated at the mouths of Parr's Ditch, the Westbourne, the Falcon, the Effra, the Neckinger, the Earl's Sluice, and the Ravensbourne. In addition there is one on the Isle of Dogs and a disused one at the mouth of the Tachbrook, and there is a complicated arrangement at the mouth of the Fleet (Ill. 67) to allow storm-water to pass directly into the Thames if necessary, provided the tide is low. This system, very little changed, is the one in operation today and our debt to its creator is immense (Ill. 66). Nevertheless, the Thames is still polluted, mainly by sewage from the outfall works carried back up-river on the tide. Some tributaries such as the Stamford Brook and the Wandle, still discharge sewage direct into the Thames, while those acting as storm relief sewers often carry sewage as well as storm-water. A report of 1961[39] urged the disposal elsewhere of storm-water, the further treatment of sewage at sewage-works, and the removal of the outfall works some thirty miles farther down-river.

2. The Rivers under London

The problems arising from these rivers were, however, not all solved by burying them. They were and still are a difficulty and a hazard to those engaged in operations beneath ground-level. They were encountered frequently while building the District Railway.[40] In some places the streams are carried across in pipes above the line, as with the Tyburn at Baker Street and Victoria, and the Westbourne at Sloane Square (Ill. 68).

In other places, the stream passes under the line, as in the case of Counter's Creek at Warwick Road, the Westbourne at Gloucester Terrace, and the Walbrook[41] at Cannon Street: here, despite underpinning, and lowering the stream as much as possible, only 19 feet were left between stream and roadway, so the booking office of the tube

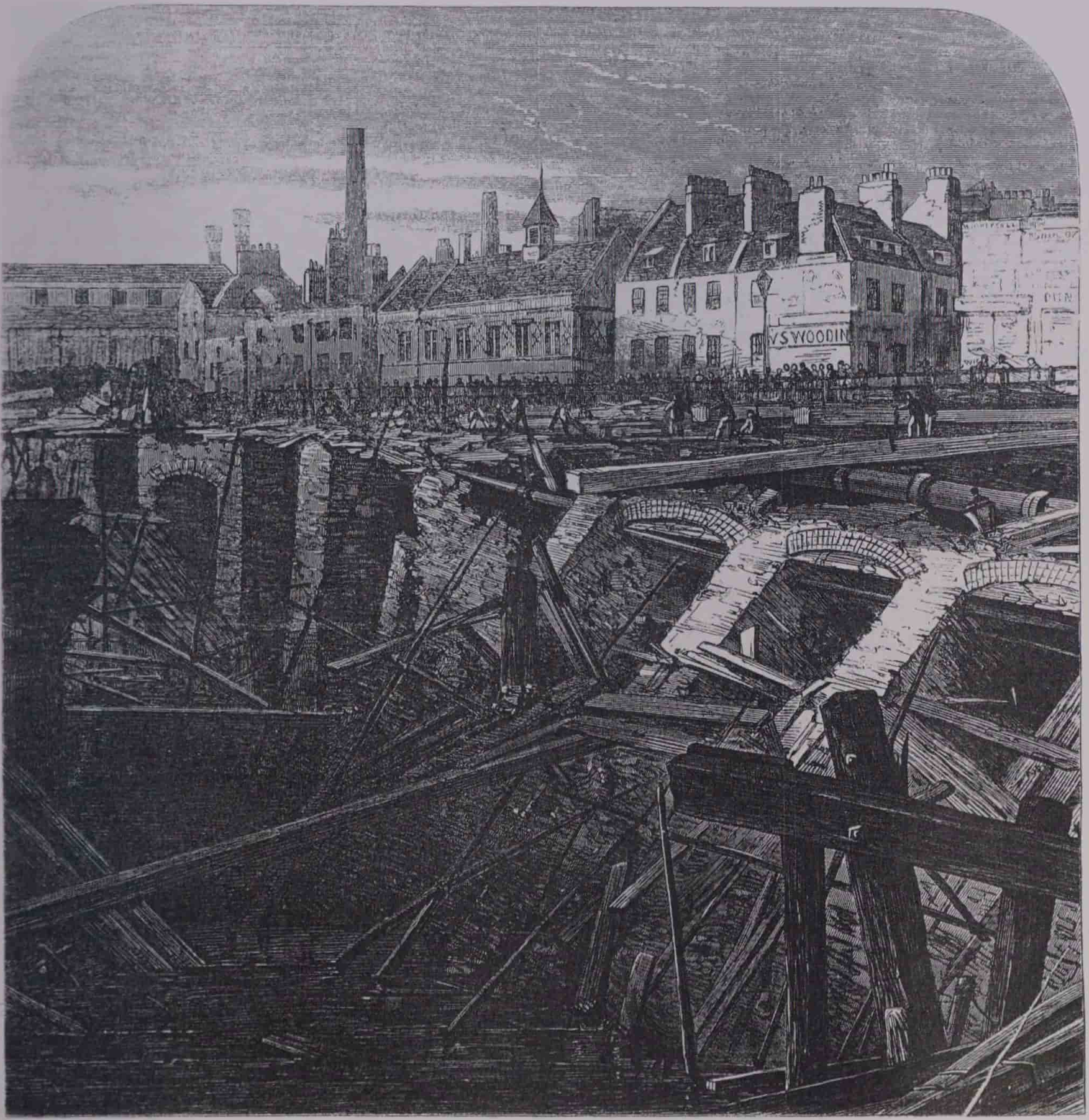


68. Sloane Square station, showing the huge iron pipe containing the Westbourne.

station had to be squeezed into the forecourt of the Southern Railway station. The Fleet 'constituted a serious difficulty' for five crossings were necessary, and the stream had to be diverted and re-diverted at Blackfriars: worse still, shortly before the line was due to be opened in 1862, the river undermined the embankment at Clerkenwell and burst into the railway, 'filling the tunnel with sewage for a great distance' (Ill. 69). The gradients on the line were also affected, being particularly steep in the upper Westbourne and Tyburn[42] valleys, and where the railway climbs out of the Fleet Valley to run eastwards in the line of the City Ditch, which was found to be 'very full of water'.

Builders, too, are constantly in trouble with these streams. I have spoken to the engineers on dozens of building-sites and have found them only too well aware of the presence of the streams. On a building-site exactly above the course of the Fleet in Queen's Crescent, Kentish Town, the foreman told me that the entire excavation had to be pumped out each morning. Excavations in the 1950s near Dowgate showed the Walbrook to be still very much a going concern, and certain houses in Pimlico are actually built on timber platforms to provide a large bearing surface on the soggy ground. The construction of the Lucas factory in Warple Way, Acton Vale, was held up for no less than a year by flooding from the nearby stream. But if these streams are contained in sewers, what are they doing causing all this trouble? This problem was, I think, solved by a surveyor called J.G. Head: 'Though we may imprison the main stream of a river in a sewer, we cannot so deal with its innumerable tributary rivulets. The brook in its course would be joined by many springs and rivulets which cannot enter the closed sewer, and these, if they still run, must be finding their way underground, and probably along the original course of the stream. This hypothesis has been suggested to me by the fact that water is constantly found under the houses which are built on or near the sites of old watercourses.' After quoting instances on the Tyburn and Westbourne, he continues: 'The watersheds are the same and below the buildings the strata are unaltered; it seems only reasonable, therefore, to infer that the water coming from the old springs makes its way towards the original beds. Indeed, wherever water-bearing strata are pierced near the courses of the old streams, water is found in such quantities as to need pumping or other provision for its disposal – instance the shallow wells in Queen Victoria Street and the presence of so much liquid mud in the vicinity of the Walbrook as to need concrete platforms to support the buildings.' There is, in fact, a flood-plain of underground rivers also, though created, of course, by a different mechanism from that described on p. 13.

Indeed, there exists, unknown to most Londoners, a whole system of underground rivers beneath the streets, as intricate and mysterious

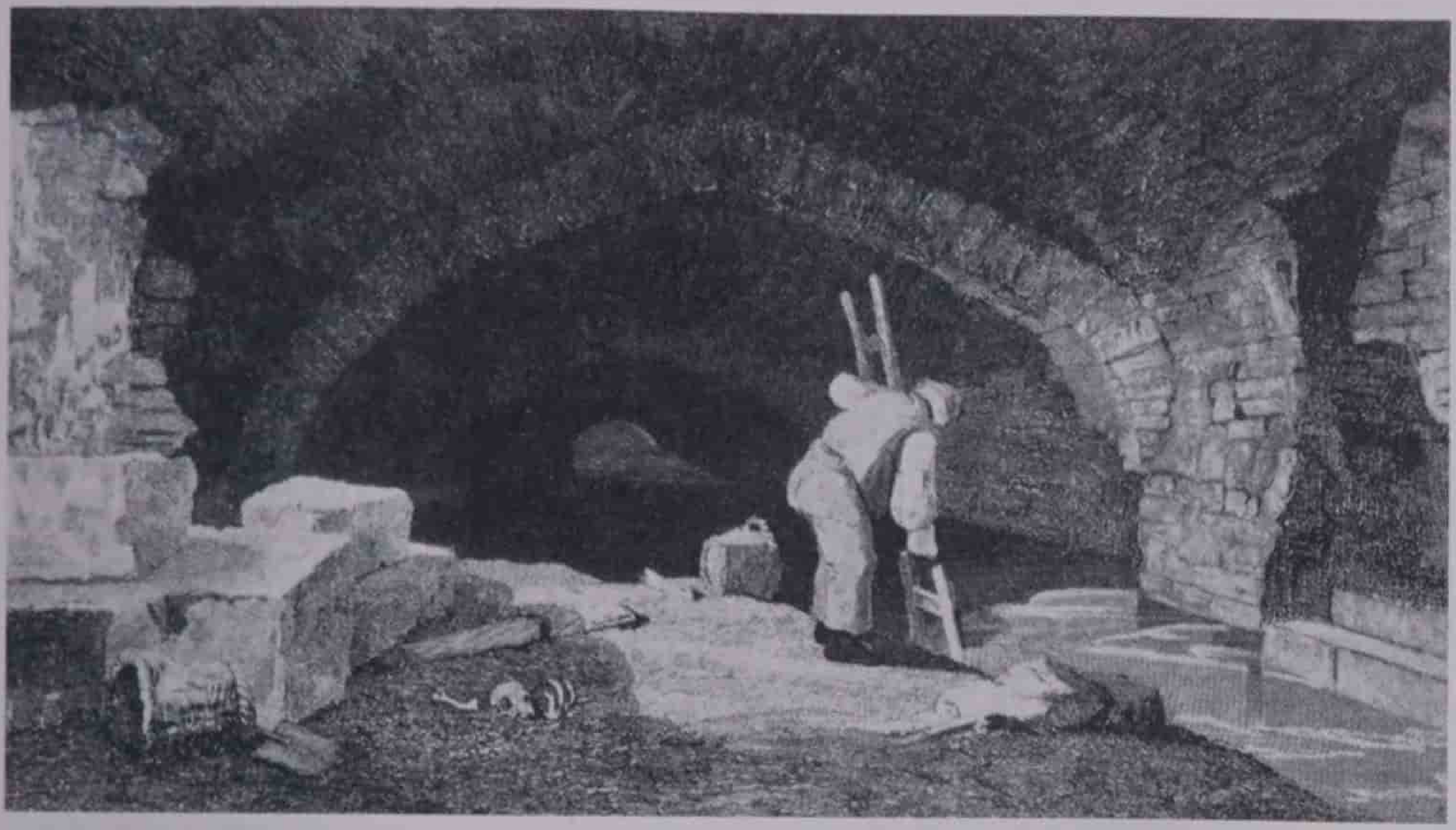


69. The Fleet river bursts and wrecks the construction of the Metropolitan Railway at Farringdon in 1862.

as those which pour from cave to cave in the heart of the Pyrenees, and partly, like them, unexplored. This is the extraordinary mixture of old and new, large and small, which forms London's sewer system. Below Piccadilly, only a few yards away from the brilliant and sophisticated world of Albany and the Royal Academy, Simpson's and the Ritz, is another and quite different world, dark, silent and deserted: '...Down below it was like crossing the Styx. The fog had followed us down from the streets and swirled above the discoloured and strong-smelling river like the stream of Hades. In fact, the water was cold.'[43] Yet this world is inhabited, no longer by the toshers, but by the two hundred sewermen who have succeeded them. They work in gangs of six 'flushers' in the charge of a 'ganger'.'The flushers' main job is to shovel up the grit which accumulates at the bottom of the sewers. They load it into skips, which are hoisted through the manholes to the street, where it is removed by contractors – often at night because of the traffic or because the flow in the sewers is too powerful by day'. A flusher is poorly paid for an unpleasant and dangerous occupation: sewermen are definitely prone to Weil's disease[44] and miner's nystagmus,[45] and are at risk from drowning, gassing and explosions, and street accidents (due to the manholes being in the middle of the road). To protect against drowning a 'topsman' stays above ground, close to the nearest telephone, and if it rains within the drainage area of the sewer he bangs a manhole cover in its hole, making a boom which is heard for some distance and warns the men below to come up at once.'A heavy shower can quickly flood the main sewer as water pours in from 2,500 miles of small local lines. Within minutes of a downpour a man could be swept away. First comes a noisy gust of wind, echoing down the tunnels; then the deluge, and the water rushes over the weirs into the dry storm-relief sewers.' The dangerous sewer-gas used to be removed in a useful way by burning it in street-lamps situated above the sewers; the last of these, in Dansey Place off Wardour Street, disappeared in the 1950s. Nowadays there is an added risk of explosion from trade wastes and petrol from the roads.

Newby says 'Even a short list of what found its way down the drains reads like a recipe for some twentieth-century witches' brew: acetylene; petrol, sometimes in large quantities; carbon dioxide, given off by hospitals and ice-cream factories; hydrogen cyanide from electroplating works, which has a nice smell of almonds, the faintest suspicion of which sent any gang of sewermen straight up the ladders to the street.'

In Paris, it is possible to visit a small section of the sewers, at the southern end of the Pont de L'Alma. A small exhibition about their history is mounted on grills above the water roaring along in the sewer below. There is even a souvenir shop but it was closed on the



70. Interior of the Fleet ditch at the back of Field Lane, a road displaced by the construction of the northern end of Farringdon Street. Engraved c1851.

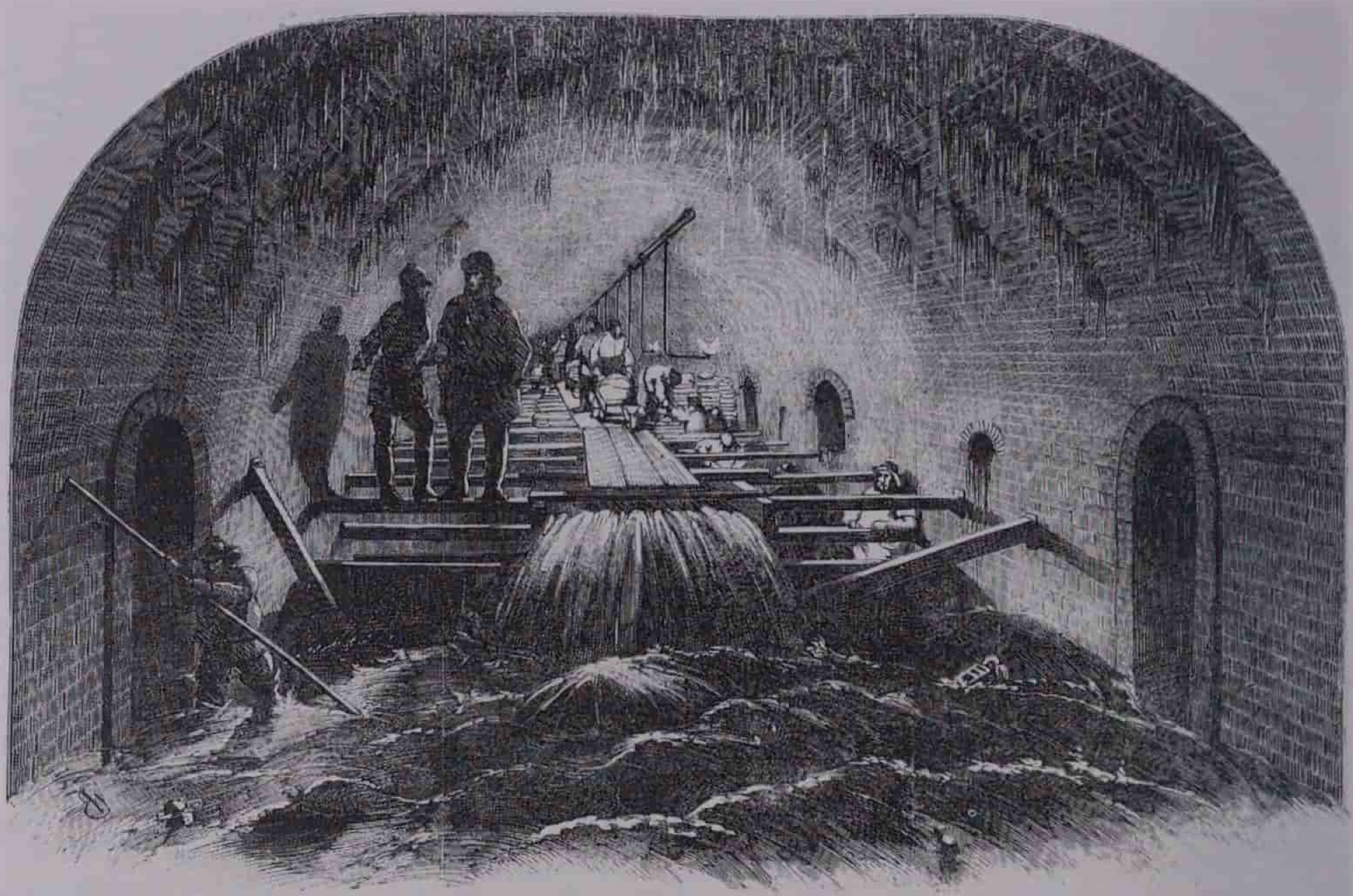
day I went and I still wonder what is sold there.

In London, it is extremely difficult to visit the sewers and I only gained permission after this book was first published in 1962. The official reluctance is due to the potential dangers and the fact that one has to be accompanied by several people, some below and some above ground, to ensure safety. I visited the southern end of the Fleet sewer, below New Bridge Street and Farringdon Street, and took the photographs reproduced as Illustrations 74 and 75.

When the manhole was first lifted an offensive smell came up but, when we descended, I was surprised how quickly I stopped noticing it. As we advanced, the roaring became louder and louder until we reached the point where, in normal conditions, the waters of the Fleet fall into the low-level intercepting sewer as a small waterfall. When the Fleet is fuller, the waters spill over a low wall to pass out into the Thames through four huge iron doors, hinged at the top, which act as valves.

Eric Newby has given a vivid description of this:

'The Fleet at Blackfriars was a complex place. Great iron tubes spanned its upper levels, through which the station subways and the trains ran. Seen fitfully by the light of miners' lanterns and special lamps, it was like one of the prisons designed by Piranesi. Everywhere there were rusty iron gratings, long chains hung from the roof and the storm relief sewer was fitted with metal doors which, although they each weighed three tons, were held open horizontally when the flood water came roaring over the weirs, as if they were the tongues of paper envelopes. At the lowest level the Fleet itself raced riverwards at a good ten knots, too strong to stand up in on a dry day, down a tunnel more than fourteen feet high. When there was a storm, they told me, first of all an apocalyptic wind raged through the sewer



71. Repair of the Fleet sewer

(Opposite):
72 and 73 at the top. Men inspecting the Fleet Sewer in the 1950s.

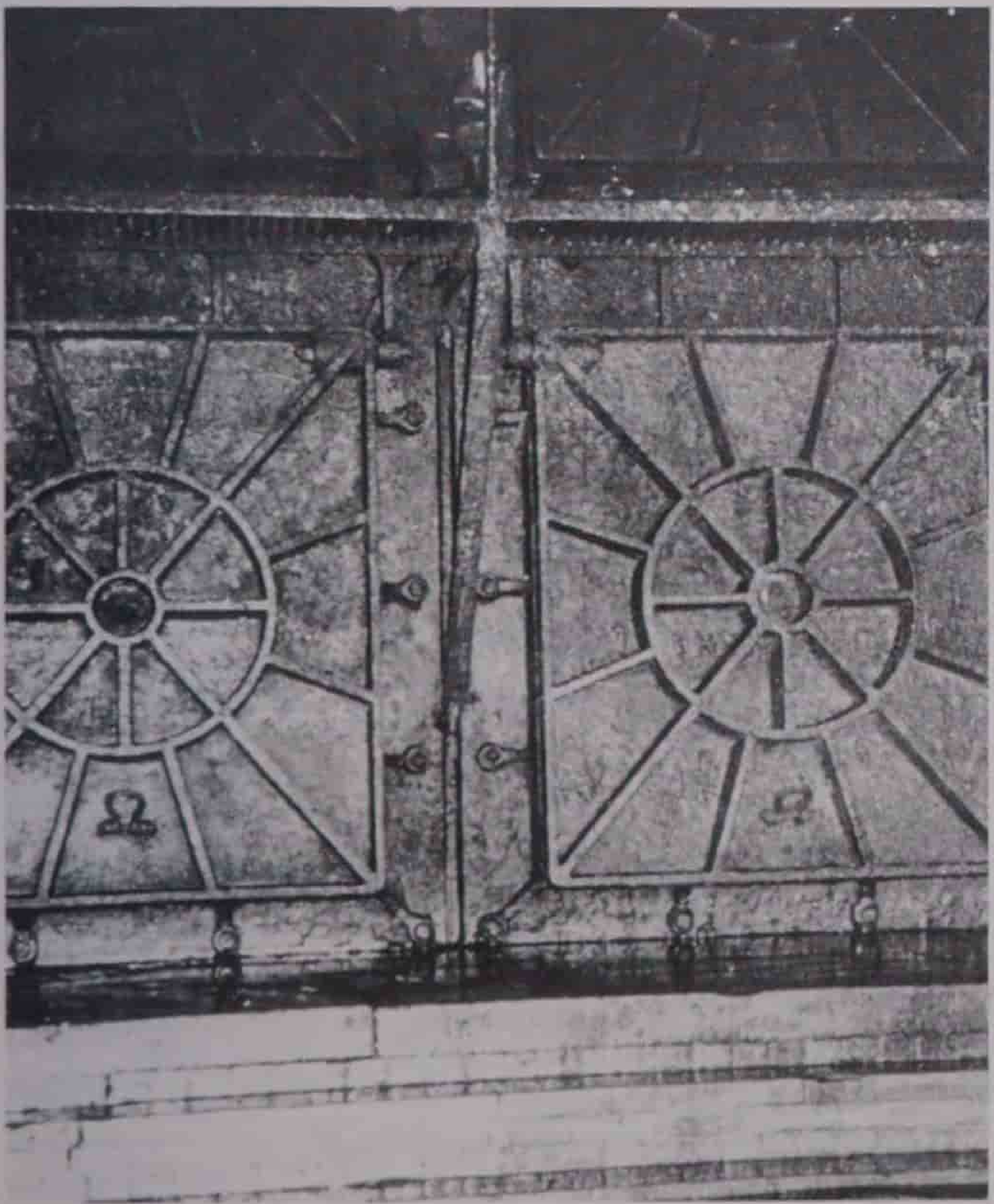
74. Iron doors in the Fleet sewer, hinged at the top, which act as valves. From here it is only yards down to the Thames.

75. Under Ludgate Circus. The branch sewer coming down Ludgate Hill joins the main Fleet sewer.

and then the rain water came thundering down, filling it up to the brim, by which time they themselves would be brewing up in their van on the surface. The most surprising thing that had ever been found in the upper levels of the Fleet, the senior member of the gang, with thirty-seven years' service, told me, was an iron bedstead. No one knew how it got there, because you cannot get a bedstead down a household drain or even down a manhole without taking it to pieces, so someone must have taken it down in bits and reassembled it.'

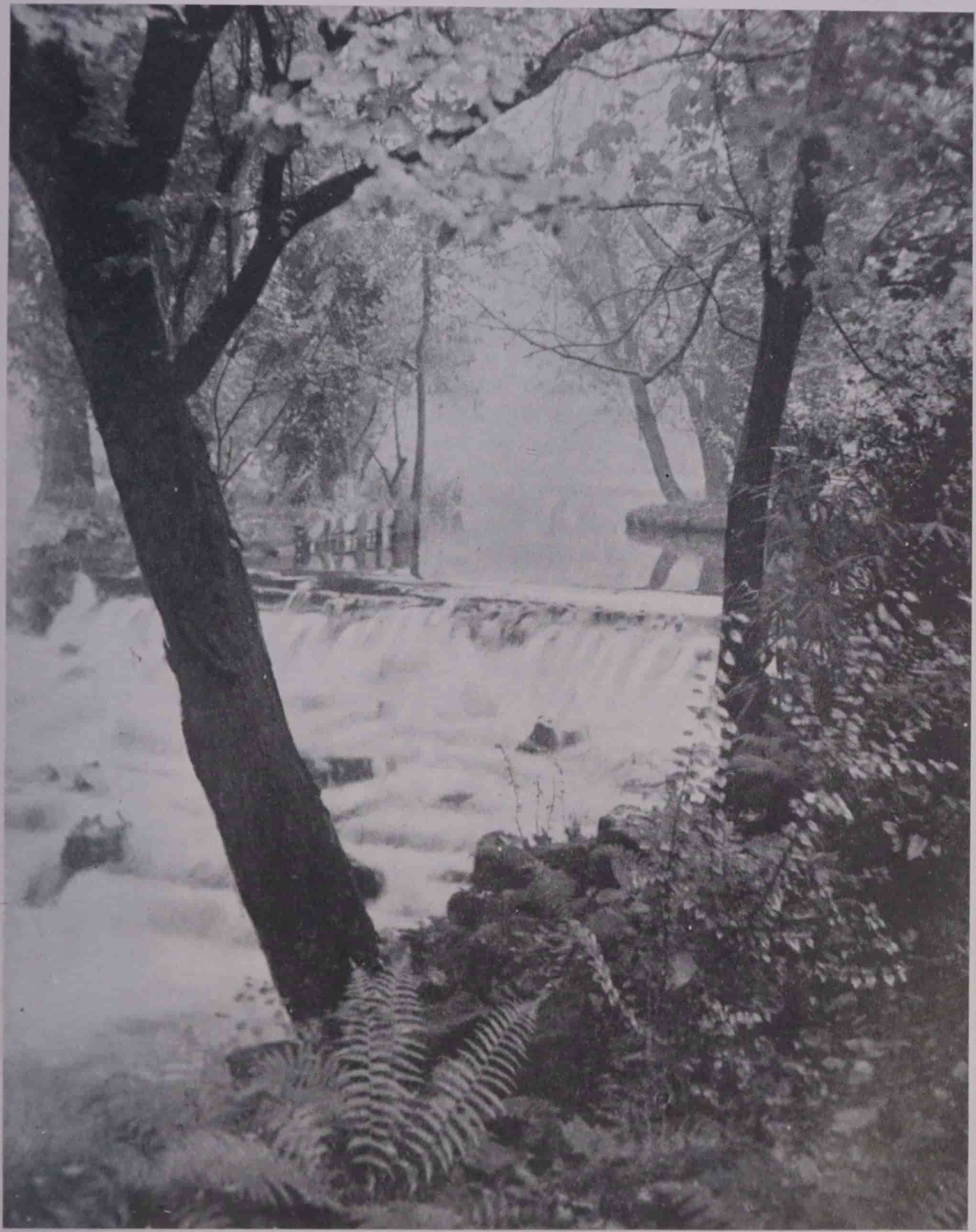
The closing scenes of the film *The Third Man* were, of course, shot in the sewers of Vienna, but I was told that the sound effects were from the Fleet.

In spite of all the dangers, the health of London sewermen is alleged to compare favourably with that of the general population,[46] and the sewermen themselves do not seem to mind the conditions in which they work at all: those whom Newby met said it was much more healthy working in the sewers than being in the open air, especially with the weather being so nasty. Indeed, one of their counterparts over a century ago declared[47] that he had been a marine in the Mediterranean and had later gone down the drains because he did not like the close air in the factories! 'Yes,' he concluded, 'I prefer the sewers to the Greek islands.'



3. The Rivers around London

Thus the tributaries of the Thames in the centre of London were buried and at last brought under control, but the lessons they should have taught about other tributaries went quite unheeded. Among the few voices raised in protest was that of Ruskin, who, as we have seen, had known what pleasure the streams could give. His impassioned outcry is worth quoting in full, both as a typical example of his writing and as demonstrating the extent of the degradation which these streams have undergone: 'Twenty years ago there was no lovelier piece of lowland scenery in South England, nor any more pathetic, in the world, by its expression of sweet human character and life, than that immediately bordering on the sources of the Wandle, and including the lower moors of Addington, and the villages of Beddington and Carshalton, with all their pools and streams. No clearer or diviner water ever sang with constant lips of the hand which giveth rain from heaven; no pastures ever lightened in spring time with more passionate blossoming; no sweeter homes ever hallowed the heart of the passer-by with their pride of peaceful gladness – fain-hidden – yet full-confessed. The place remains, or, until a few months ago, remained, nearly unchanged in its larger features; but with deliberate mind I say, that I have never seen anything so ghastly in its inner tragic meaning – not in Pisan Maremma, – not by Campagna tomb, – not by the sand-isles of the Torcellan shore, – as the slow stealing of aspects of reckless, indolent, animal neglect, over the delicate sweetness of that English scene: nor is blasphemy or impiety – any frantic saying or godless thought – more appalling to me, using the best power of judgement I have to discern its sense and scope, than the insolent defiling of those springs by the human herds that drink of them. Just where the welling of stainless water, trembling and pure, like a body of light, enters the pool of Carshalton, cutting itself a radiant channel down to the gravel, through warp of feathery weeds, all waving, which it traverses with its deep threads of clearness, like the chalcedony in moss-agate, starred here and there with the white grenouillete; just in the very rush and murmur of the first spreading currents, the human wretches of the place cast their street and house foulness; heaps of dust and slime, and broken shreds of old metal, and rags of putrid clothes; they having neither energy to cart it away, nor decency enough to dig it into the ground, thus shed it into the stream, to diffuse what venom of it will float and melt, far away, in all places where God meant those waters to bring joy and health. And, in a little pool, behind some houses farther in the village, where another spring rises, the shattered stones of the well and of the little fretted channel which was long ago built and traced for it by gentler hands, lie scattered, each from each, under a ragged bank of mortar, and



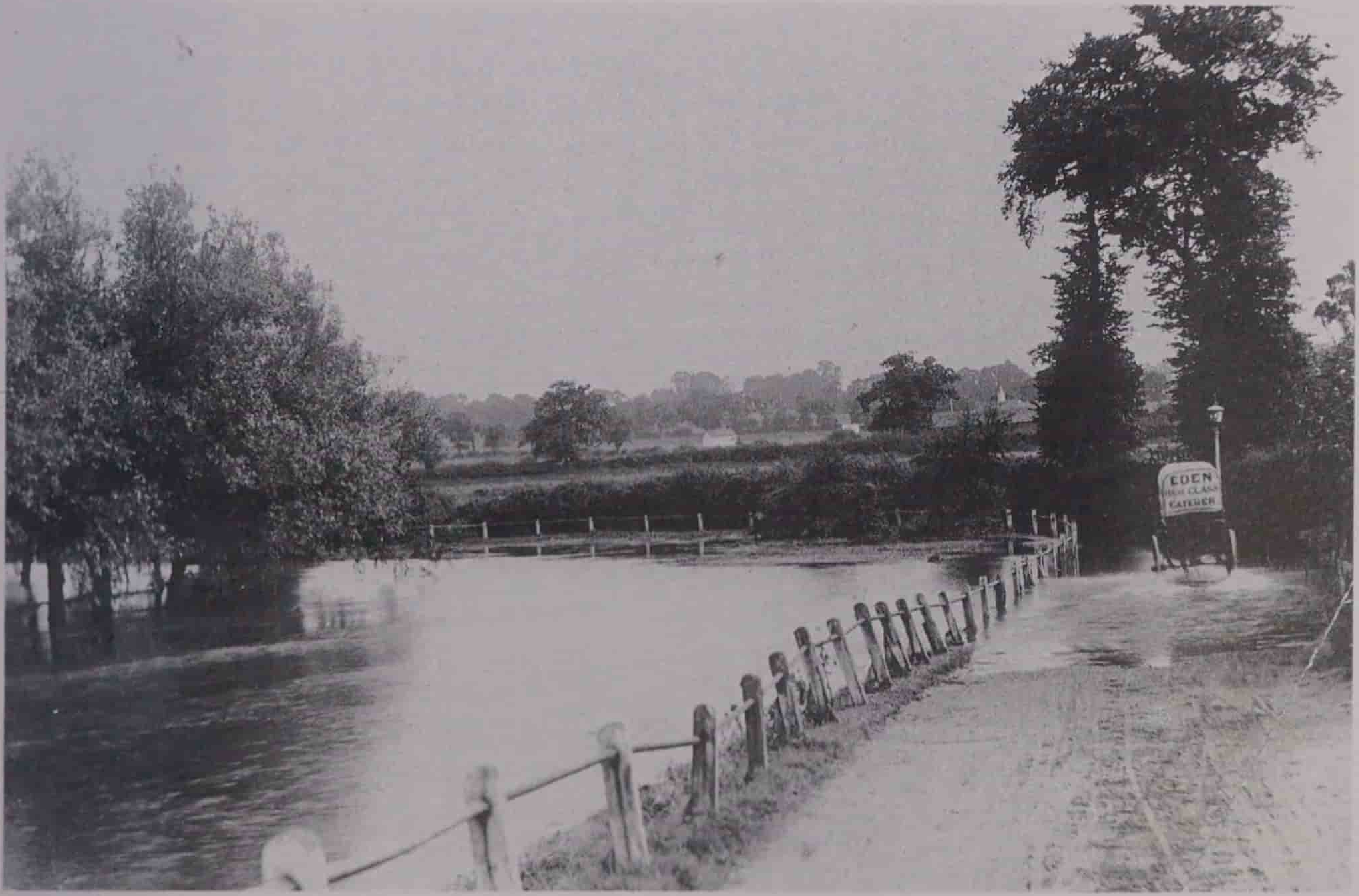
76. Cascade on the Wandle in the grounds of The Grove, Carshalton.

scoria; and bricklayers' refuse, on one side, which the clean water nevertheless chastises to purity; but it cannot conquer the dead earth beyond; and there, circled and coiled under festering scum, the stagnant edge of the pool effaces itself into a slope of black slime, the accumulation of indolent years. Half a dozen men, with one day's work, could cleanse those pools, and trim the flowers about their banks, and make every breath of summer air above them rich with cool balm; and every glittering wave medicinal, as if it ran, troubled of angels, from the porch of Bethesda. But that day's work is never given, nor will be; nor will any joy be possible to heart of man, for evermore, about those wells of English waters.'[48] In fact, Ruskin did not stop at words but was himself responsible for restoring and endowing St Margaret's pool at Carshalton,[49] thus falsifying his own gloomy prophecy (Ill. 76). We have seen how the River Wandle Open Spaces Society continued his work (see p. 116).

Another account of the pollution of one of the outer London rivers, less flowery and more recent and therefore perhaps even more convincing, refers to the Brent shortly before the turn of the century. Bulwer-Lytton, who lived near by, had referred in one of his novels to the walks he enjoyed with his sweetheart 'on the green banks that shade Brent's humble flood', but a later writer commented: 'A spell more potent than that which attracted lovers now warns the pilgrim off.' In 1890 complaints began to be made, and in 1892 a report was made by a Dr Copeman, but was ignored. In 1897 E. Bailey Denton, an engineer, went over the whole course with a companion and drew up a report and recommendation. It is not pleasant reading. He described the upper part of the river as 'merely an open sewer': above the Welsh Harp 'black lumps of sewage were floating down the stream and on all sides gases were bubbling up from its bed'. He was informed that 'not only had all the fish between Hanwell and Ealing long since been killed, but even the water rats had fallen victims of the foulness of the water': in fact he fell a victim himself, 'the smell being such as to make my companion and myself ill'. He blamed certain sewage works, especially those at Hanwell, Wembley and Hendon, which were discharging untreated sewage into the river. This provoked a series of self-satisfied pronouncements and resolutions by the various councils to the effect that their own area happened to be particularly clean although the others were disgustingly polluted. Thus Hanwell blamed Wembley: 'At the present time masses of sewage sludge are visible floating on the canal above the Tumbling Bay [where the canal joined the Brent], and are being continually carried over into the backwater only some thirty yards above the effluent outlet from the Hanwell works. Each laden barge that passes up the canal stirs up the filthy deposit in the bed, and barge-men state that the condition of the waterway above the Hanwell outfall is such that they are unable to eat their meals until they get above the London Colney Asylum locks.

However, by this time questions were being asked in the House of Commons, and public opinion was roused, sharing with Bailey Denton the view that 'questions of expense and difficulty sink into insignificance when the health and lives of thousands are at stake, and this is now literally the case in the unfortunate Valley of the Brent'. Finally, an Act of Parliament was obtained, and ten years after Denton's report, a doctor reviewing the story wrote: 'To this stream the term "lethal" may, perhaps, not unjustly be applied for it is probable that no other open stream in a rapidly growing residential district has been the cause of greater trouble.'[50] In a footnote he points out that Lethe was one of the rivers of Hell.

While it is not possible even today to say that the condition of these outer tributaries is as it should be, it has at least been demonstrated that a stream can flow for some distance through a built-up area without necessarily being disagreeable and troublesome. This is shown by the river Pinn, which is a pleasant and often picturesque little river as it winds its way westwards through Pinner (to which it gives its name) and Ruislip, crossed in places by little wooden bridges



77. The River Brent flooding at Perivale Lane, c1900.

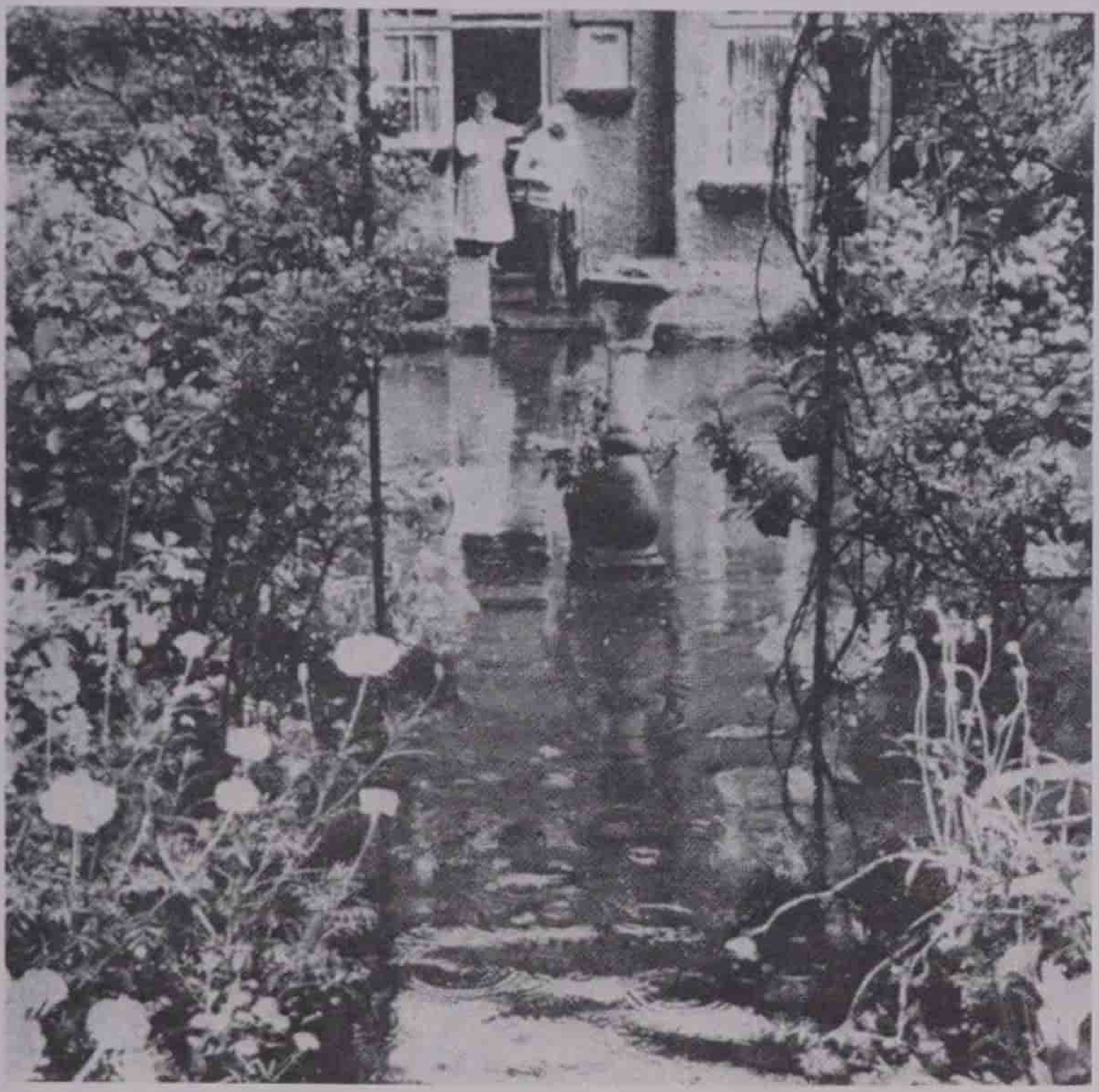
to the houses, reminiscent of those which used to exist on the Effra (see p. 52). The small flood near Eastcote Road in 1954, in which one house was, like Piglet's, 'entirely surrounded by water', was due to incorrect manipulation of the sluices during a prolonged period of rain. The Mutton Brook is another example of good planning and rewarding results.

4. The Rivers Today

The outer tributaries have, then, been largely tamed, and the inner ones consigned to a little-frequented underworld. One might therefore imagine that these small rivers, however important in London's history, no longer have any active influence on the lives of Londoners. Nothing could be farther from the truth.

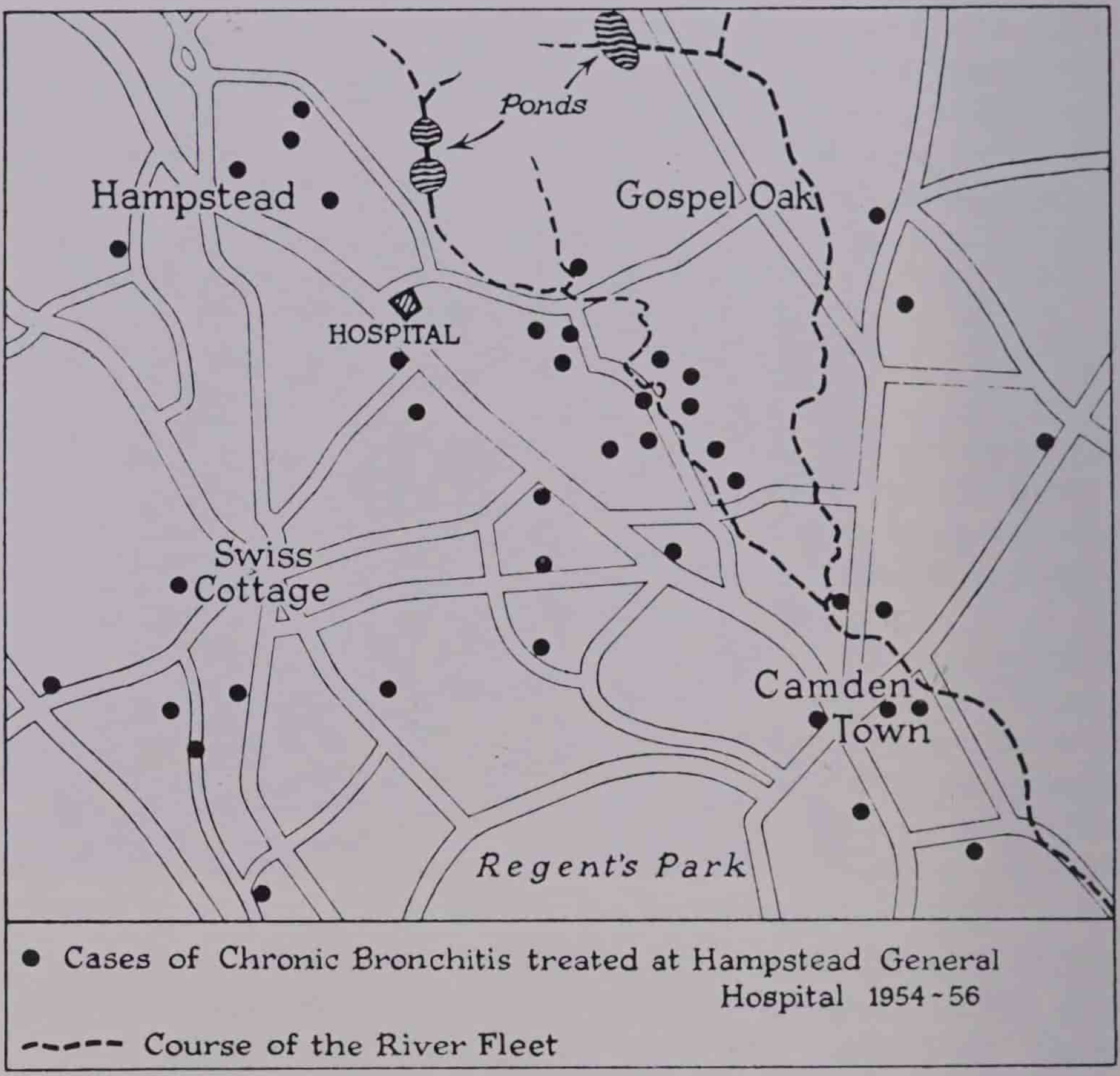
Almost every one of the problems mentioned earlier in this chapter as arising from these streams is still a problem. The question of responsibility for maintenance of the streams in good condition is even today a political issue: the Wandle, for example, is a perennial and unfailing bone of contention in the councils of those boroughs through which it passes. Accidents still occur, as do floods: in times of storm it is not at all uncommon for the back-pressure from the overfull sewers to burst open the manholes which cover them and flood cellars and even roads.[51] A storm occurring at high tide when the Fleet cannot empty freely into the Thames can still flood basements in Farringdon Street. Problems of contamination and waste-disposal arise from the discharge of industrial wastes and household detergents into the streams. Ill. 1 gives some idea of the trouble caused by the foaming of detergents, and experiments with special new detergents have been made on the upper reaches of the Lea. The rivers which are still open are often extremely smelly, and anyone who thinks the Whitefriars were exaggerating (see p. 126) should go and sniff the Wandle or the Brent. Indeed, a tributary of the Brent illustrates all of the last three points: this is Wealdstone Brook, which flows through Wealdstone and Kenton to join the Brent near Wembley Stadium (see street-map). Rubbish accumulates in the stream and dams it up, producing an overpowering smell at all times and regular flooding after heavy rain. A woman interviewed in 1960[52] described the smell as 'terrific' and said 'we are always taking rubbish out of the stream, but when it got to a whole apple-tree, complete with apples, we had to call the council in'. Another inhabitant said: 'We are all really fed up with this stench, we are a proper no-man's land down here and I speak for all my neighbours...We live in constant fear of the return of the floods.' Ill. 78 shows why.

The rivers still give rise to squalor and disease, and this is true as



78. Flooded garden in Becmead Road, Kenton, 1960. The name of the people is Storm.

much of the buried as the open ones. In the 1950s I was told that if you looked down the plugholes of the baths in the houses in Fleet Road, Hampstead, you could see the river Fleet flowing beneath them. This was not true: there were no baths in the houses in Fleet Road. The Fleet was responsible for an unhealthy pond at the southern end of Pond Street (where the bus terminus now is). A correspondent whose mother went to school nearby in the 1880s told me that her mother's younger brother 'died of fever' brought on by injudicious paddling in the pond.[53] The Fleet in this area, once 'fringed by very old picturesque willows which often found a place in artists' sketchbooks,[54] were covered by dirty, dreary, damp tenements which probably found an important place in housing reformers' notebooks. So damp were the conditions, one woman told me, that even after the council had made improvements to prevent the cellar flooding, it was still impossible to leave out a pair of shoes in the hall overnight without their being white in the morning. Naturally, these houses were unhealthy in the extreme, especially for children, and Map 11 shows that they had a noticeably higher incidence of chronic bronchitis.[55] In this connection we may observe that the valleys of these rivers, especially those that are still open, are particularly subject to fog. Indeed (quite apart from infectious diseases in whose spread water plays a part, such as plague, cholera, and typhoid fever) the streams have always been, and still are, responsible for disease simply by virtue of



Ponds
Hampstead
Gospel Oak
HOSPITAL
Swiss Cottage
Camden Town
Regent's Park
● Cases of Chronic Bronchitis treated at Hampstead General Hospital 1954 - 56
----- Course of the River Fleet

MAP 11. *The relation between waterways and the incidence of chronic bronchitis.*

the damp conditions which they create. In addition to chronic bronchitis, the following may be mentioned:

(i) London Ague. This was a type of malaria[56] formerly very common in London and afflicting such distinguished persons as Oliver Cromwell, Charles II, William III and Queen Anne. Clippingdale, in a most interesting article on 'West London Rivers – extant and extinct', suggested that 'the disappearance of London Ague may be due to the closing in of many little streams that formerly intersected London'. Several modern writers describe Moorfields as 'a malarious swamp'; this is very likely true, though I have found no contemporary references to this.

(ii) Sudor Anglicus, the English sweating sickness. This mysterious malady, of which the classical description is that of John Caius,[57] is difficult to equate with any disease known today. It is likely that it was due to some virus which no longer occurs, or which now causes so different an illness as to be no longer recognisable:[58] it is well known that virus diseases can change their character in this way. The disease was 'always preceded by heavy rains and inundations', and there were epidemics in Middlesex in 1485, 1506, 1517, 1528 and 1551. In the first of these 80–90 per cent of victims died, mostly on the second day of the illness, but in later epidemics the mortality was less.

(iii) Tuberculosis, which is unquestionably more common among those whose resistance is lowered.

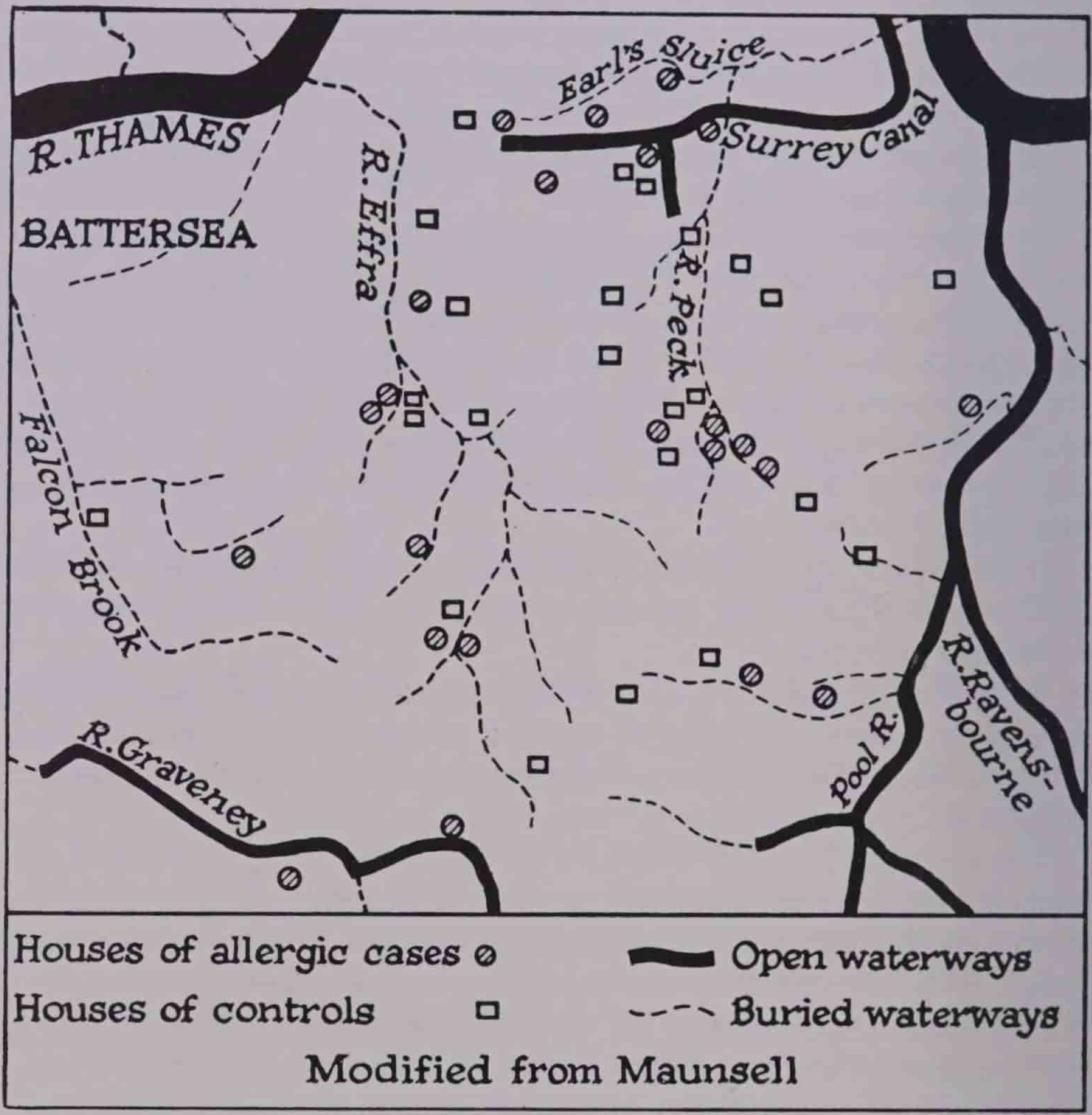
(iv) Rheumatic complaints. These conditions are notoriously aggravated by dampness, and Clippingdale stated that rheumatism was unusually common on both sides of Counter's Creek from Shepherd's Bush to Chelsea. He said the land was so moist as to be 'very suitable for the growth of vegetables but not so suitable for human beings', and adds that fog is also very prevalent in this area and that there was moss growing on the stucco on the second floor of houses near Addison Road station.[59]

(v) Influenza. An outbreak of influenza in Coldbath Fields prison in 1832 was attributed by Ashton to the River Fleet. Other examples have also been cited.

(vi) Allergic conditions. This is the one group of diseases, so far as I have been able to discover, in which a properly controlled statistical study of their relationships to lost rivers has been carried out, and the results are very striking (see Map. 12).

The investigation was made by Dr Kate Maunsell, to whom I am most grateful for explaining it to me, on two groups of 49 patients from hospitals in both north and south London. The first, or control, group were non-allergic patients with various diseases of the ear, and it was found that 17 out of the 49 lived within 180 yards of a known watercourse in London, either buried or still open. The other 49 patients, attending the same outpatient clinics, were suffering from allergic rhinitis (of which hay fever is one form) and in 19 cases from bronchial asthma also. It was found that 38 out of the 49 allergic patients (i.e. 77.5 per cent) lived within 180 yards of a known watercourse; in the asthmatic group the proportion was even higher, 17 out of the 19 living within 180 yards of a watercourse. The waterways were canals and open rivers, and, in the majority of cases, the buried tributaries of the Thames. All the houses were low-lying and were built on London Clay. They were damp.

These patients were selected as all displaying a sensitivity to house dust (i.e. those who were sensitive to pollen, or not demonstrably sensitive to anything, were excluded), and the place of residence considered was that in which the patient was living at the time when the sensitivity began. It was suggested at the time that the figures might be due to some effect of fungus spores which flourish in damp conditions[60] but this has been proved false, and the mechanism of this striking and statistically significant relationship remains obscure. These facts were presented to the first International Congress for Allergy in Zurich in 1951, and an Italian, Dr Geseo, who was present,


R. THAMES
BATTERSEA
R. Effra
Earl's Sluice
Surrey Canal
R. Peck
Falcon Brook
R. Graveney
Pool R.
R. Ravensbourne
Houses of allergic cases ⊘
Houses of controls □
Open waterways
Buried waterways
Modified from Maunsell

MAP 12. *Places of onset of house-dust allergy of the respiratory tract in relation to waterways: London districts south of the Thames. The control patients are more diffusely spread than the allergic ones.*

subsequently carried out a similar investigation in Milan which confirmed the validity of Dr Maunsell's results.

Judging from the patients I have seen myself who live close to the streams, I have little doubt that accurate research would reveal an association with many other diseases.

Finally, even in a realm which would seem well beyond the range of influences from underground rivers, namely that of alleged 'paranormal' phenomena, a close study strongly suggests an association between the two. This study, entitled 'The Geography of London Ghosts', was made by G.W. Lambert[61] in 1960, and consisted principally of a geographical analysis of the hundred cases of haunting, poltergeists, or other disturbances reported to the Society of Psychical Research between 1868 and 1959. These were divided, as a convenient arbitrary grouping, into postal districts, and their relationship determined to underground watercourses as shown on the 6-inch Geological Survey maps. Of the ten cases in the W.1. district, he found seven to have occurred in houses significantly close to watercourses;

in W.2 there were five out of eight; and in S.W.1 there were six out of seven. This makes a total of eighteen out of twenty-five (about 75 per cent) and, although I do not think the presence of a watercourse is proved in all of these cases, there certainly seems to be a significant association in fifteen out of the twenty-five (60 per cent), nine being close to the Tyburn and six to the Westbourne. Other instances have been related to disused drains. There is also a little evidence to suggest that the disturbances are more common in wet years and at wet times of the year.

Although this series is probably not large enough to be statistically significant, there is no doubt that the geographical analysis is very striking, and it is hard to avoid the conclusion that some, at least, of these houses are haunted by nothing more alarming than the ghosts of London's lost rivers, booming and gurgling in times of flood.

Even in the case of apparitions, which are a rare form of disturbance, there is often some preceding acoustic disturbance, usually described as 'footsteps' or 'the swishing of a silk skirt': this last phrase is particularly suggestive of a noise made by water movements. It is easy to see how the occurrence of such noises could lead to the development of a story to explain them, which would in turn induce a frame of mind in which a purely subjective experience would be interpreted as an apparition. Lambert points out that 'even in a case where an apparition or dream is the first reported incident, it may have been preceded by some unaccountable noises or feelings, not reported, which occasioned the apparition or dream as a secondary effect'. Indeed, considering the country as a whole, there seems to be no doubt that all these forms of disturbance occur most commonly either in places beside the sea or a tidal estuary,[62] or in limestone country, which is, of course, precisely the terrain in which underground rivers and caverns tend to be found. There would seem to be no questioning Lambert's conclusion that 'it is not too much to claim that the time has now come to look for detailed observations in the most likely quarter, namely underground, and no longer to jump to the conclusion that all is lying, trickery, or "psychic" agency'.

NOTES

1. Inquisitions, 16. Edw. I.
2. 6 Richard II.
3. 3 Henry V.
4. 48 Edw. III.
5. A full account is given by Honeybourne.
6. This was the most important of four prisons along the Fleet, and is fully dealt with by Ashton. The others came later and were Ludgate Prison, Cold Bath Fields Prison (at Mount Pleasant) and Bridewell Prison (in the former Palace).
7. There is some reason to believe that the Romans built the first bridge here; at any rate it is known that a wooden bridge existed in 1159, and was replaced *c.* 1431 by the stone bridge described by Stow. A new one was, of course, built after the Fire of 1666, and Pepys refers to having to make a detour while it was being built.
8. Honeybourne. Bodies were often washed up in the Fleet.
9. Reid.
10. Stow. This confirms that the Walbrook (which, from the context, is definitely meant) was at least by this time reduced to a narrow channel.
11. *Notes and Queries*, 11th series, vol. ii, p. 17.
12. Williams.
13. *Gentleman's Magazine*, 9 May 1818 (quoted by Ashton).
14. Davis.
15. Kent.
16. Foord.
17. W.H. Bell (1924). The modern system, of course, does not differ in principle.
18. Epigrammes, No. 133 (published in 1616).
19. Honeybourne.
20. i.e. banks.
21. The difficulties of rubbish disposal in the City and of the Scavengers who had to try and cope with it are discussed by Mitchell and Leys. An inventory of items found in the Fleet, some of Roman origin, is given by Ashton.
22. *Tatler*, 17 October 1710 (quoted by Ashton).
23. *Gentleman's Magazine*, 1844.
24. Quoted by Waller.
25. Honeybourne. The Whitefriars (who were Carmelites) were supported by the Blackfriars and the Bishop of Salisbury.
26. Williams.
27. W.G. Bell (1924).
28. Quoted by Thornbury and Walford.
29. A friend of mine claims to have seen this well-known story reported as a fact in a reliable newspaper, but unfortunately cannot remember which or when. There have been a novel and a film with a similar theme.
30. It was here that Bill Sikes met his end. We may note that Fagin had previously lived near the Fleet, and that he is based upon a real character who flourished in this area (see Ashton).
31. 'A visit to the cholera district at Bermondsey' *Morning Chronicle*, 24 Sept. 1849). This area has been transformed by the conversion of warehouses into flats and offices and is now an attractive and interesting district, which smells of the cinnamon once stored in one of the warehouses.
32. See F.E. Kingsley.
33. Rawlinson.
34. *Morning Herald*, 2 July 1832 (quoted in a manuscript note by Crosby). Two workmen were drowned during the alterations.
35. Quoted by Rawlinson.
36. A vivid and first-hand impression of the miseries the people were going through is given by Karl Marx, who was living in Dean Street, only a few hundred yards away from the offending pump. At one time his whole family was ill and they had no money to call in a doctor. Looking back on it in 1857; Marx wrote to Engels: '...I still always get terrified by the neighbourhood of Soho Square when I happen to be passing through it.' (See Wilson.)
37. Their book is marred by a lack of references, and no information is given as to where Hollingshead's original account may be found.
38. See Rawlinson and one of the many textbooks of Public Health, of which that by Frazer seems to me the best.
39. H.M.S.O.
40. The difficulties met are described in separate articles by Baker and Barry, the two engineers responsible, whose combined talents later produced the Forth Bridge.
41. Here carried in the Dowgate Hill sewer, '6 feet in internal diameter, and often running full'.
42. This can be seen clearly by looking westwards from the Inner Circle platforms at Baker Street station.
43. This, and the following two quotations are from Jenkins, 'Down to the Black Deep,' *Guardian*, 10 November 1960. The description is of a branch sewer situated under Piccadilly and draining into the Tyburn. This is, therefore, the Ayre Street sewer mentioned on p. 66 or a more modern version of it.
44. A form of jaundice caused by a spiral organism excreted in the urine of rats. It is often fatal.
45. A tremor of the eyes from constantly working in the dark.
46. Rawlinson, but there appears to be no actual survey of their health. In Glasgow, where the conditions are admittedly much worse, an excellent study has been made by J.H. Bell, which shows that as a result of the disabilities they develop, few of the sewermen are able to continue work until they reach the retiring age.
47. When interviewed by Mayhew.
48. Ruskin (1866).
49. Now, in consequence, often called Ruskin's Pool.
50. Clippingdale.
51. Mr L.H. Rowe, in a personal communication.
52. *Harrow Observer*, 18 August 1960.
53. Information J.F. Dudley.
54. Waller.
55. Based on an investigation by the present writer. One feels sorry for Karl Marx, who, trying to get away from Soho (see p. 130 n. 36) only succeeded in moving into this most unpleasant and unhealthy part of Hampstead.
56. It is fully discussed by Ewart.
57. The re-founder of the Cambridge college which bears his name.
58. Burnet.
59. Originally the terminus of the West London Railway at Kensington basin (see p. 79). Its name was changed from Kensington to the quite misleading Addison Road, when it was acquired by the Metropolitan Railway Co., which liked 'road' names. It is now Kensington (Olympia).
60. Dry rot is a fungus disease (of houses, not people) which is commoner in these damp houses.
61. I am indebted to Mr Lambert not only for allowing me to read the draft of his fascinating article before publication, but for explaining to me other points not included in it. Further studies are in progress. See also p. 67.
62. In this connection it is worth noting that tidal effects are known to be transmitted up underground rivers: for example, the tide can still be felt in the Walbrook sewer as far up as Lothbury.

CONCLUSION

IN THIS study I have tried to show how those tributaries of the Thames which flow through the London area have influenced the growth of the city we know today, and that as long as they were properly treated they were both beautiful and useful. Two writers have been quoted as comparing these rivers to the rivers of Hell but another and earlier writer used the adjective 'divine' in his description. Some out of many possible examples have been quoted to illustrate the variety of ways in which these streams have contributed to the defence, trade, social life and health of London. This aspect has been little stressed in previous writings on this subject, and I would like to lay particular emphasis upon it.

We have also considered the better-known story of the way in which, when they were maltreated, they rose against those who so misused them, with disasters and diseases, and we have observed an almost unbelievable refusal on the part of the authorities to benefit from earlier mistakes. There are practical lessons to be learnt from this, not only for those rivers in London which are still open, but in approaching this same problem in other towns throughout the world, especially those which are growing. I once visited a small village in Austria, which was then expanding as a ski-ing resort, but it was already clear that in a few years' time the stream which flowed through the middle of the village was going to be anything but a tourist attraction. The moral seems clear: either you must treat your rivers with respect, or you must enclose them in a scientific manner as early as possible, keeping detailed and permanently accessible records of what you have done and where you have done it. These would be of great value to later planners and builders. Even today the geological survey and large scale sewer-maps of London are far from complete.

We have further seen that, despite the collective name by which these rivers are usually known and which forms the title of this book, they are not lost, but merely hidden: 'a river can sometimes be diverted, but it is a very hard thing to lose it altogether'.[1] We have seen how these ancient servants of an ancient city were made to play a useful part once more, and the extent of our debt to the determined and far-seeing individuals who made this possible is shown by the descriptions quoted of conditions only one or two centuries ago. The measure of the change is that today we need never stop to think about these streams, although they are still flowing silently along beneath our feet, 'the ghosts of the rivers which once beautified London and the country round about, and – in the words of the old monk, Fitzstephen – "whose sweet, wholesome and clear waters flowed rippling over the bright stones"'[2]

However, there are people who are thinking about them. In 1992, the Effra Redevelopment Agency launched a campaign to bring that part of the Effra which flows along the edge of Brockwell Park – and perhaps ultimately the whole of the Effra – back to the surface as a visible and enjoyable river, 'with plants and animals returned to their original habitats; a proper place for your children to play...a London where city and nature live in harmony; a water city – a city of the twenty-first century'. The proponents of this imaginative and ambitious scheme say 'imagine windsurfing down Brixton Road, fishing by the Oval or paddling through West Norwood.' This sounds like agreeable hyperbole but is not beyond the bounds of possibility. Anyone who has visited the city of San Antonio in Texas and seen how a sluggish and contaminated loop of river flowing between buildings in the city centre has been turned into an area which is a delight to visit, with paths along each side and restaurants beside then, gardens and boat trips, will know what can be done.

This Effra project was part of a series of events held in London in May 1992 'to re-establish the link between the city and nature, to return the rivers of London to our lives and imaginations, and to celebrate the waters that flow beneath our feet'. Under the title *Still Waters* and supported by grants from the Arts Council and other bodies, four rivers were chosen, each with a theme: the others were the Fleet, the Walbrook and the Wandle. The Fleet, from its association with Fleet Street, represented language, and various events were held along its course; it is now planned to mark its course by a series of plaques fired from the River Fleet's own clay (similar to those marking the homes of famous people) on buildings along the line of the Fleet. The Walbrook was used as a metaphor for a city which has lost any connection with its natural shape: 'the city in extremis'. A feasibility study is under way to plant trees above the line of the Walbrook to restore an element of nature. The Wandle symbolised power: the reactivation of Merton Abbey Mill and plans for micro-hydro-electric turbines have been described on page 104. These new machines can generate 100 kW from small heads of water and are being developed by Intermediate Technology, a charity based in Rugby. The inventor of the device, Peter Fraenkel, says 'It is like a hamster's running wheel but with special streamlined bars'. There are thousands of weirs all over the country whose power, now wasted, could be harnessed in this way and the third world must be crying out for cheap small-scale hydro-electric stations like these.[3]

I can therefore end this book with the encouraging news that there are signs that at least some parts of these rivers may resume a more attractive and obviously useful existence and become, once more, streams of consciousness.

NOTES

1. Kent.
2. Head.
3. Further information about all these projects can be obtained from Platform, 7 Horselydown Lane, Tower Bridge, Bermondsey, London SE1 2LN (071–403 3738).

APPENDICES

The appendices give details of sources of maps and written references. (Sources of illustrations are given in the list on p. 8.) These show how extensively I have made use of the work of others, as indeed is inevitable in a subject of this nature. They do not, however, show how great is my debt to all the people who have helped me personally, and it is a real pleasure to record my gratitude to them. Acknowledgments may be boring to read but it is far from a tedious duty to write them. Also, since the first publication of this work in 1962, I have had numerous letters from informed readers supplying me with even more details, sometimes pointing out omissions and faults, but invariably enthusiastic about lost rivers. I have incorporated some new information, supplied by these later correspondents, in this revised edition.

My wife and my parents put up with lost rivers for years without complaining, and my wife and my father read through the entire book in manuscript and made countless valuable comments. Mrs K. Wilson gave most generously of her time and skill to type the greater part of the manuscript. Dr John Gough and Dr Gerald Woodbine made special expeditions to take photographs for me, and Dr Howard Sergeant made a number of helpful suggestions. Many experts gave me the benefit of their special knowledge, and these I have indicated in the footnotes: there remains a host of people – builders, librarians and others – without whose help the gaps in my knowledge would have been even greater.

Indeed, the amount of new information which I learnt simply by chance, or through the kindness of people who knew I was interested, showed me all too clearly how much there is I do not know. Even the written sources, which I have scoured pretty thoroughly, are not exhausted: I did not, for example, read every local history of every part of London, nor on the other hand did I succeed in tracking down the eyewitness account of the burying of the Effra which I am told exists somewhere. There must be a vast pool of knowledge scattered among thousands of individuals, and I very much hope that the republication of this book will lead to some of this pool being tapped and added to the body of recorded knowledge. Not all the omissions from the present book are accidental, but I have no doubt that its readers will be able to teach me much of which I am ignorant and perhaps correct me if I am wrong.

In conclusion, and in order not to over-emphasise the importance of the sources listed in the appendices, I would like to stress the value of personal observation and inquiry on the spot. Many problems which appear in the library disappear in the field: this is strikingly illustrated by Faden's course for the Effra (see p. 51) which is manifestly absurd to anyone who has actually seen the places concerned. There is still plenty of scope for field work of this sort, and it is only this personal experience which can really teach one how the lost rivers affect the lives of Londoners today.

APPENDIX I: MAPS

The most convenient places I have found for studying maps of old London are the Guildhall Library, the Greater London Record Office and the University of London Library. These establishments have large and accessible collections of original maps and London Topographical Society reproductions, and I strongly recommend consulting maps in these forms, as again and again I have found reproductions of maps in books so misleading as almost to seem as if they had been deliberately falsified. *Maps of Old London*, edited by G. Mitton (1908) contains reliable reproductions of some of the more important maps, but on a rather small scale.

There follows a list of the main maps I have consulted, arranged in chronological order, together with a brief note on some of them. I have classified them by a system of stars (similar to that used by the Automobile Association for hotels) which indicates only the value of the maps for the study of streams and watercourses.

Three stars = of outstanding importance
Two stars = important
One star = some help
No star = of no help

Wyngaerde's panorama (1558–63)	**
Agas's' map (1560–70)	***
Unsurpassed among the early maps for detail.	
Hoefnagel's map (*c.* 1560)	*
From Braun and Hogenburg (1572), *Civitas Orbis Terrarum*.	
Plan of Soho (1585)	
Drawn for use in a lawsuit about Geldings Close. Subject of a book by Kingsford (see Appendix II)	
Map of the Precincts of St Mary Graces, Tower Hill (*c.* 1590)	*
Part is reproduced as Ill. 50	
Norden's map (1593)	*
Survey of lands belonging to Clothmakers' Company (1612)	*
Speed's map of Middlesex (1620)	*
Hollar's panorama (1647) *and various maps* (e.g. 1667)	
Faithorne and Newcourt's map (1658)	**
Porter's map (1660)	*
Moore's map (1662)	
Plan of Ebury Manor (1663–70)	**
Ogilby and Morgan's map (1677)	*
Plan of Manor of Walworth (1681)	*
Hill's plan of Manor of Vauxhall (1681)	*
Morden and Lea's map (1682)	**
Morden's map (1690)	**
Showing the outer London area. From Camden's *Britannia*	
Hamilton's map of Chelsea (1717)	

Senex's map (1720) *
Willday's map (1720) **
Showing 'Thirty miles around London'.
Seller's map of Middlesex (1732) *
Rocque's map of London (1741–5) ***
Rocque's map of the Environs of London (1741–5) ***
These two maps are indispensable
Cary's map (1783) *
Harris's map (1790) **
Map of Duke of Bedford's estate (1795) *
Horwood's map (1799) ***
Large scale, showing every house. Especially good for parish boundaries
Faden's map (1800) ***
Not completely reliable (see p. 51) but of great importance especially for outer London.
Mogg's map (1810)
Laurie and Whittle's map (1810) **
Valuable for rivers south of the Thames
Salway's plan of Kensington Turnpike (1811) *
Discussed by Prideaux (1906) (See Appendix II)
Faulkner's map of Fulham (1813) *
Greenwood's map of Middlesex (1818–19)
Starling's plan of the parish of Kensington (1822) **
Cary's map (1829)
Probably based on the same survey as Faden
Salter's plan of Hammersmith (1830) *
Wylde's map (1839)
Also probably based on the same survey as Faden.
Veitch's plan for the Sewerage of the Metropolis (1851) ***
(Reproduced by Rawlinson – see Appendix II)
Roberts's plan of the parish of Hammersmith (1853) **
Wyld's map (1870) **
Bolus's sketch-map of Hackney Brook (1909) **
Geographical Survey (6-inch) maps (1935–6) ***
These mark not only all streams but also indicate the area of alluvial soil adjoining them which is usually (rather misleadingly) called the flood-plain. While these give far the best picture of the course of the streams in relation to the modern town, I do not think they are entirely trustworthy. In particular, there are several smaller streams and tributaries of streams marked which are conspicuously absent from contemporary large-scale maps whose accuracy is otherwise unquestioned: I think these must be little 'runnells' or 'bournes', down which water drains in very rainy weather, but with insufficient flow to sustain a permanent stream.
Ordnance Survey (1-inch) maps ***
Geographer's A-Z Atlas of London ***
It is surprising how much may be learned simply from a careful and intelligent study of accurate modern maps, such as the O.S. map for outer London and the Geographer's Atlas for central London.

APPENDIX II: BOOKS AND ARTICLES

These too may be conveniently seen in the Guildhall Library, the University of London Library or, of course, the British Museum Library. The University of London is particularly useful for studying journals, as most of those quoted are on open shelves. Many public local history libraries, such as that at Hampstead, are excellent. I have not been able to study the original document in every case, but I have done so wherever possible.

The following list contains details of almost all the works quoted in the text or its footnotes, arranged in alphabetical order of authors. Anonymous articles, or those whose author is not obvious, are identified in detail in the footnote to the relevant part of the text, and not mentioned here.

Ashton, J. (1890), *The Fleet – its river, prison, and marriages.*
Baker, B. (1884), *Minutes of the Proceedings of the Institute of Civil Engineers,* lxxxi, part 3.
Bardwell, William (1839), *Westminster Improvements.*
Barry, J.W. (1884), *Minutes of the Proceedings of the Institute of Civil Engineers,* lxxxi, part 3.
Bell, J.H. (1953), *Transactions of the Association of Industrial Medical Officers,* ii, 141.
Bell, W.G. (1920), *The Great Fire of London in 1666.*
  (1924), *The Great Plague of London in 1665.*
Bell, W.G., Cottrill, F., and Spon, C. (1937), *London Wall through Eighteen Centuries.*
Besant, Sir Walter (1895), *Westminster.*
  (1899), *London South of the Thames.*
  (1908), *Early London.*
  (1912), *London.*
Bolitho, H., and Peel, D. (1952), *Without the City Wall.*
Brayley, Edward W., and others (1841–8), *Topographical History of Surrey,* vol. iii.
Brett-james, N. (1928), *London Topographical Record,* xiv.
  (1935), *The Growth of Stuart London.*
Bruce-Mitford, R. (editor) (1952), *Recent Archaeological Excavations in Britain.*
Bull, Sir William (1929), *Parish Magazine of St Mary's, Stamford Brook,* November 1929.
Burnet, Sir Macfarlane (1953), *Natural History of Infectious Disease,* 2nd edition.
Camden, W. (1586), *Britannia* (English trans. 1610).
Chancellor, E.B. (1926), *The West End of Yesterday and Today.*
Chambers, R. (editor) (1863–4), *Book of Days.*
Clarke, B., under the pseudonym 'F.R.C.S.' (1894), *Glimpses of Ancient Hackney.*
Clippingdale, S.D. (1909), *West London Medical Journal,* xiv, I.
Crow, Arthur (1923), *Transactions of London and Middlesex Archaeological Society,* new series, v, part I, 67.
Davies, A. Morley (1913), *Transactions of London and Middlesex Archaeological Society,* new series, ii.

DAVIS, H.G. (1859), *Memorials of the Hamlet of Knightsbridge.*

DE MARÉ, E. (1958), *London's Riverside – Past, Present, and Future.*

DENTON, E.B. (1897), *British Medical Journal*, ii, 490.

DIO CASSIUS (*c.* 229), *Roman History.*

EKWALL, E. (1928), *English River-names.*

(1954), *Street-names of the City of London.*

ELLIS, C. HAMILTON, *British Railway History* (Vol. 1 – 1954; Vol. 1 – 1959).

ELLIS, SIR HENRY (1840), Introduction to his edition of Norden's *Essex.*

EWART, W. (1897), *Journal of Balneology and Climatology*, vol. i, 24.

FÈRET, CHARLES JAMES (1900), *Fulham Old and New.*

FOORD, A.S. (1910), *Springs, Streams, and Spas of London.*

FRAZER, W.M. (1953), *Hope and Stallybras' Textbook of Public Health*, 13th edition.

GAY, JOHN (1716), *Trivia.*

GOVER, J., MAWER, A., and STENTON, F. (1942), *The Place-names of Middlesex; apart from the City of London.*

GRADY, A.D. *East London Papers*, vol. i, No. 1.

GREY, I. (1956), *History Today*, vi. 225.

GREY, LORD (1754), *The Secret History of the Rye House Plot; and of Monmouth's Rebellion* (written 1685).

GRIMES, W.F. (1952), in *Recent Archaeological Excavations in Britain*, edited by R. Bruce-Mitford.

HEAD, J.G. (1907), in a paper read to the Auctioneers' Institute of the United Kingdom (photostat copy in the Guildhall Library).

HOBSON, J.M. (1924), *The Book of the Wandle.*

HOLINSHED, R. (1577), *Chronicles of England, Scotland, and Ireland.*

HONEYBOURNE, M. (1947), *London Topographical Record*, xix.

HOWARD, E.M. (1960), *Middlesex Pictorial*, vi.

HOWE, E. (1955), *A Short Guide to the Fleet River.*

JOHNSON, B.H. (1952), *Berkeley Square to Fleet Street..*

JONES, DR (1560), *Dyall of Agues.*

KENT, W. (1951), *Encyclopaedia of London*, revised edition.

KINGSFORD, C.L. (1925), *Early History of Piccadilly, Leicester Square, and Soho.*

KINGSLEY, F.E. (1879), *Life and Letters of Charles Kingsley.*

KNIGHT, C. (editor) (1841–4), *London.*

LAMBERT, F. (1921), *Archaeologia*, lxxi, 55.

LAMBERT, G.W. (1960), *Journal of the Society for Psychical Research*, xl, 397.

LANE-FOX, A.H. (1867), *Anthropological Review*, v, 71.

LARWOOD, J. (1881), *The Story of the London Parks.*

LOFTIE, W.J. (1883), *History of London*, 2 vols.

MACKAIL, J.W. (1899), *Life of Morris.*

MACKAY, C. (1840), *The Thames and its Tributaries*, 2 vols.

MAITLAND, W. (1739), *London.*

MAUNSELL, K. (1951), *Proceedings of First International Congress for Allergy*, p. 306.

MAYHEW, H. (1851), *London Labour and the London Poor.*

MITCHELL, R., and LEYS, M. (1958), *A History of London Life.*

NEWBY, ERIC (1982), *A Traveller's Life.* (Picador paperback edition, 1983.)

NORMAN, P. (1928), *London Topographical Record*, xiv.

ORMSBY, H. (1928), *London on the Thames*, 2nd edition.

PERCY, T. (1765), *Reliques of Ancient English Poetry.*

PEVSNER, N. (1957), *The Buildings of England – Cities of London and Westminster.*

PHILLIPS, H. (1951), *The Thames about 1750.*

POPE, ALEXANDER (1728), *The Dunciad.*

PRICE, J.E. (1869), *Transactions of the London and Middlesex Archaeological Society*, iii.

PRIDEAUX, W.D., *Notes and Queries*, 9th series, vol. viii, p. 517; *see also* vol. ix, pp. 51, 92, 190, 269, 291, 375, 476; vol. x, p. 16.
(1906), *London Topographical Record*, iii, 61.
(1908), *London Topographical Record*, v, 144.

RAWLINSON, J. (1955), *Centenary of London's Main Drainage*.

READER, F.W. (1903), *Archaeological Journal*, lx, 137

REDDAWAY, T.F. (1940), *The Rebuilding of London after the Great Fire*.

REID, KENNETH C. (1954), *Transactions of the London and Middlesex Archaeological Society*, new series, vol. xi, part iii.

ROACH-SMITH, C. (1842), *Archaeologia*, xxix, 147.

ROBBINS, M. (1953), *Middlesex*.

ROBINSON, W. (1842), *History and Antiquities of Hackney*.

RODWELL-JONES, LL. (1931), *The Geography of London River*.

ROUND, J.H. (1893), *Archaeological Journal*, l, 259.

RUSKIN, J. (1866), *The Crown of Wild Olive* (Preface).
(1875), *Fors Clavigera*, letter 54.
(1885), *Praeterita*.

SAUNDERS, GEORGE (1836), *Archaeologia*, xxvi, 223.

SPURRELL, FLAXMAN C.J. (1855), *Archaeological Journal*, xlii, 269.

STOW, J. (1598), *Survey of London* (John Strype's edition, 1720; Everyman's Library edition, 1912 and subsequently).

SUNDERLAND, S. (1915), *Old London Spas, Baths, and Wells*.

TAYLOR, JOHN GEORGE (1925), *Our Lady of Battersey*.

THORNBURY, W. and WALFORD, E. (1873), *Old and New London*, 6 vols.

TITE, SIR WILLIAM (1848), *Descriptive Catalogue of Antiquities found in Excavations at the New Royal Exchange*.

TRENCH, R. and HILLMAN, E. (1984), *London under London*.

UNWIN, GEORGE (1938), *The Gilds and Companies of London*, 3rd edition.

WAILES, R. (1954), *The English Windmill*.

WALFORD, E. (1882–5), *Greater London*.

WALLER, J.G. (1875), *Transactions of the London and Middlesex Archaeological Society*, iv. See also *Gentleman's Magazine* (1856), new series, vol. xlv, 486, 570.
(1890), *Transactions of the London and Middlesex Archaeological Society*, vi. See also *Gentleman's Magazine* (1857), new series, vol. ii, 322 and (1859), new series, vol. vii, 144.

WALTON, I. (1653), *The Compleat Angler*.

WARD, N. (1698–1709), *London Spy*, part 6.

WELCH, C. (1916), *History of the Cutlers' Company of London*.

WIGHT, JANE A. (1961), 'A Suffolk patient goes to Bart's, *East Anglian Magazine*, vol. xx, p. 467.

WILLIAMS, E. (1927), *Early Holborn and the Legal Quarter of London*.

WILSON, E. (1941), *To the Finland Station*.

WOOD, A. (1946), *Ancient watercourses in the Parish of St Margaret's, Westminster* – an unpublished paper kept in the Westminster Abbey Library.

WOOLDRIDGE, S.W., and MORGAN, R.S. (1959), *Outline of Geomorphology*, 2nd ed.

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Cricklewood
GLADSTONE PARK
SLADES
EDGWARE ROAD
Kentish Town
West Hampstead
Willesden Green
Willesden
CRAVEN PARK ROAD
NORTH CIRCULAR ROAD
HARROW ROAD
KILBURN HIGH ROAD
PRIMROSE HILL
Camden Town
Regent's Canal
Zoological Gardens
REGENT'S PARK
Kilburn
QUEEN'S PARK
Harlesden
HIGH STREET
Kensal Green Cemetery
HARROW ROAD
Lord's Cricket Ground
MAIDA VALE
Paddington
WESTERN AVENUE
WORMWOOD SCRUBS
WESTBOURNE
TYBURN
Paddington Sta.
WESTWAY
White City Stadium
Notting Hill
Bayswater
Marble Arch
OXFORD STREET
Mayfair
BAYSWATER ROAD
NOTTING HILL GATE
HOLLAND PARK AVENUE
HYDE PARK
KENSINGTON GARDENS
The Serpentine
ACTON VALE
UXBRIDGE ROAD
STAMFORD BROOK
Acton
GOLDHAWK ROAD
COUNTER'S CREEK
KENSINGTON ROAD
KNIGHTSBRIDGE
GREEN PARK
Buckingham Palace
Kensington
KENSINGTON HIGH STREET
Brompton
Brook Green
Olympia
Hammersmith
HAMMERSMITH ROAD
CHISWICK HIGH ROAD
KING STREET
Hammersmith Creek
CROMWELL ROAD EXTENSION
CROMWELL RD EXT TO GT WEST RD
West Kensington
OLD BROMPTON ROAD
South Kensington
Sloane Square
Victoria Station
Chelsea
Pimlico
Chiswick
Chiswick Eyot
PARR'S DITCH
Earl's Court Exhibition
LILLIE ROAD
FULHAM PALACE ROAD
KING'S ROAD
Chelsea Football Ground
FULHAM ROAD
Chelsea Hosp.
QUEENS ROAD
BATTERSEA PARK
RIVER THAMES
Barnes
Chelsea Creek
NEW KINGS ROAD
Battersea
BARNES COMMON
UPPER RICHMOND ROAD
LAVENDER HILL
Clapham
Clapham Junction Station
SHEEN COMMON
Putney
EAST HILL
ST. JOHN'S HILL
FALCON
CLAPHAM COMMON
WEST HILL
PUTNEY HEATH
KINGSTON RD.
KING GEORGE'S PARK
WANDSWORTH COMMON
Wandsworth
RICHMOND PARK
WANDLE
BALHAM HIGH ROAD
Balham
PUTNEY VALE
BEVERLEY BROOK
WIMBLEDON COMMON
WIMBLEDON PARK SIDE
TOOTING BEC COMMON
KINGSTON VALE
KINGSTON HILL
KINGSTON BY-PASS
Tooting
TOOTING HIGH STREET
GRAVENEY

Stamford Hill
Finsbury Park
Stoke Newington
Clissold Park
Abney Park Cemetery
Pumping Station
Highbury
Highbury Stadium
Holloway
Hackney Downs
Hackney Brook
Hackney
Homerton
Hackney Cut
Lea River Navigation
Lea Bridge Road
Stratford
Victoria Park
Dalston
London Fields
Islington
Hoxton
Bethnal Green
Mile End
Bromley
Stepney
Black Ditch
Whitechapel
Commercial Road
East India Dock Road
Canning Town
Barking Road
Wapping
Poplar
River Thames
Southwark
Rotherhithe
Rotherhithe Mill Stream
Bermondsey
Newington
Lambeth
Sluice
Walworth
Kennington
Deptford
Greenwich Park
Greenwich
New Cross
Camberwell
Peckham
Blackheath
Effra
Stockwell
Ruskin Park
Peck
Peckham Rye Park
Brixton
Lewisham
Herne Hill
Brockley
Ravensbourne
Brockwell Park
East Dulwich
Dulwich Park
Knight's Hill
Forest Hill
Streatham
Norwood
Norwood Cemetery
Sydenham